

	Type	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition
1	BRS	14	wreath adj hanger	USPAT; US-PCPUB; EPO; JPO; DERWENT	2002/02/07 16:15		
2	BRS	67842	detent	USPAT; US-PCPUB; EPO; JPO; DERWENT	2002/02/07 16:15		
3	BRS	0	(wreath adj hanger) and detent	USPAT; US-PCPUB; EPO; JPO; DERWENT	2002/02/07 16:15		
4	BRS	610774	adjustable	USPAT; US-PCPUB; EPO; JPO; DERWENT	2002/02/07 16:16		
5	BRS	3	(wreath adj hanger) and adjustable	USPAT; US-PCPUB; EPO; JPO; DERWENT	2002/02/07 16:22		
6	BRS	11	("0191645" "D360355" "D365015" "D374168" "3199820" "3511461" "3536286" "4407478" "5542631" "5553823" "5607130") PN.	USPAT	2002/02/07 16:17		
7	BRS	0	6311851.URPN.	USPAT	2002/02/07 16:18		
8	BRS	19	("2263956" "2673056" "2889016" "2920853" "3089597" "3168275" "3177048" "3258238" "3917207" "3944809" "4332060" "4691396" "4696448" "5134822" "5157881" "5398856" "5624095" "5681019" "5903869"), PN.	USPAT	2002/02/07 16:19		
9	BRS	21	2820853.URPN.	USPAT	2002/02/07 16:20		
10	BRS	282090	hook	USPAT; US-PCPUB; EPO; JPO; DERWENT	2002/02/07 16:22		
11	BRS	7708	detent and hook	USPAT; US-PCPUB; EPO; JPO; DERWENT	2002/02/07 16:23		
12	BRS	2060	adjustable and (detent and hook)	USPAT; US-PCPUB; EPO; JPO; DERWENT	2002/02/07 16:23		
13	BRS	96659	248/\$.ccls.	USPAT; US-PCPUB; EPO; JPO; DERWENT	2002/02/07 16:24		
14	BRS	136	(adjustable and (detent and hook)) and 248/\$.ccls.	USPAT; US-PCPUB; EPO; JPO; DERWENT	2002/02/07 16:37		

L Number	Hits	Search Text	DB	Time stamp
11	58309	hanger	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/03/01 13:25
12	84698	detent\$1	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/03/01 13:26
13	1423	hanger and detent\$1	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/03/01 13:26
14	1369790	resilient or flexible	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/03/01 13:26
15	783	(hanger and detent\$1) and (resilient or flexible)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/03/01 13:27
16	14	("0486804" "1294916" "3536287" "D275917" "D304545" "5014948" "5413297" "D365015" "5542631" "5645178" "6145678" "6299118" "6311851" "6325344").PN.	USPAT	2004/03/01 13:31
17	11	("D252088" "D267604" "1902241" "2516617" "3536287" "3870428" "3874035" "3891176" "4335864" "4387873" "4405109").PN.	USPAT	2004/03/01 13:33
18	9	D304545.URPN.	USPAT	2004/03/01 13:34
19	6	("D259228" "2484535" "2500881" "2706049" "2743023" "3941250").PN.	USPAT	2004/03/01 13:37
20	11	D275917.URPN.	USPAT	2004/03/01 13:38

United States Patent [19]

Merlini

[11] 4,335,864

[45] Jun. 22, 1982

[54] NEWSPAPER HOLDER

[76] Inventor: Marjorie A. Merlini, 36-1 Briarwood La., Marlboro, Mass. 01752

[21] Appl. No.: 139,461

[22] Filed: Apr. 11, 1980

[51] Int. Cl.³ A47F 5/00

[52] U.S. Cl. 248/316 D; 24/259 R

[58] Field of Search 248/316 R, 316 D, 316 B; 24/259 R, 260, 255 R, 252 R, 253; 211/89; 232/1 C

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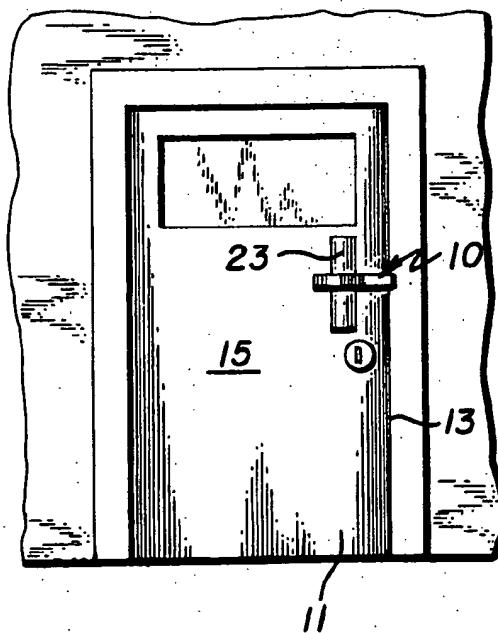
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Primary Examiner—J. Franklin Foss
Attorney, Agent, or Firm—Blodgett & Blodgett

[57] ABSTRACT

Holder having a clip to clamp on the edge of a door and a bow for holding a newspaper or the like against the surface of the door.

5 Claims, 7 Drawing Figures



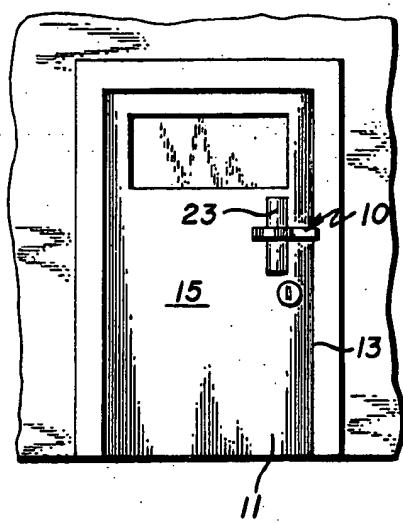


Fig. 1

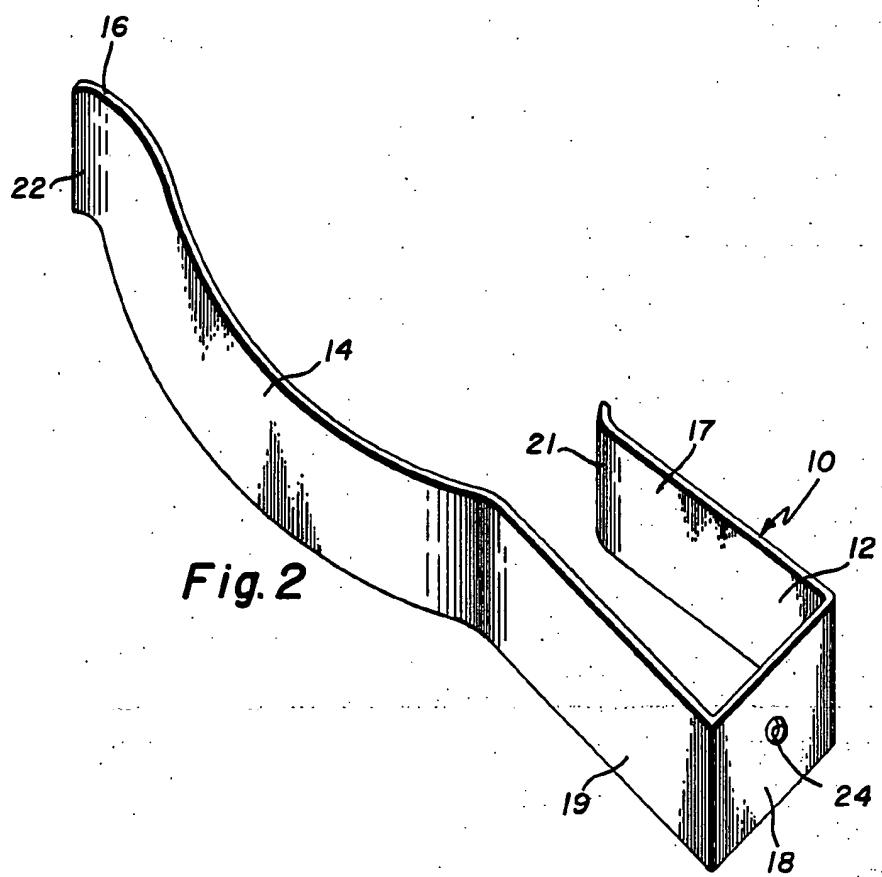


Fig. 2

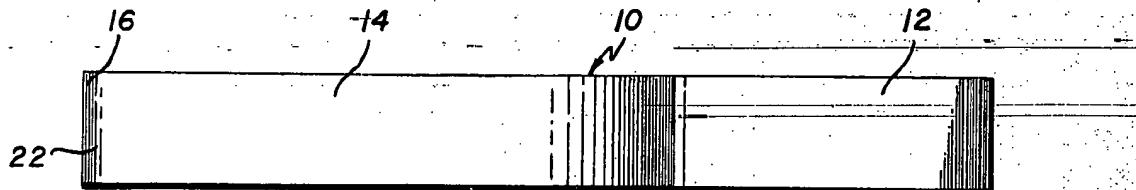


Fig. 3

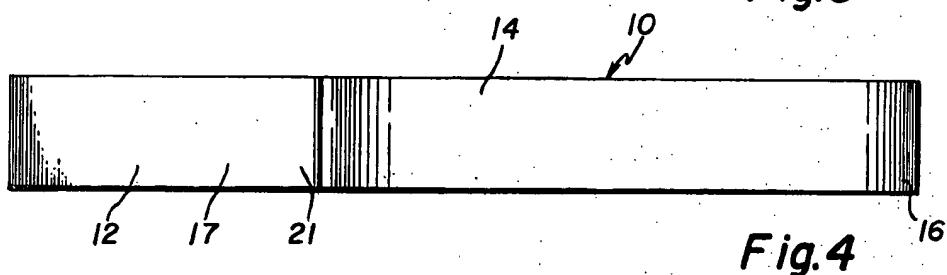


Fig. 4

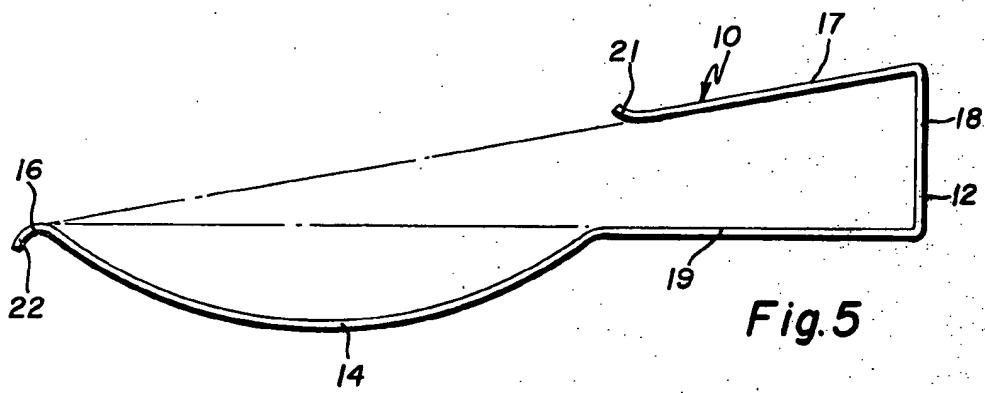


Fig. 5

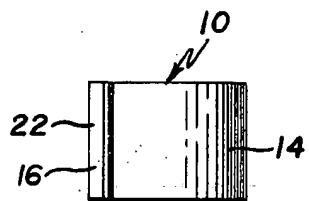


Fig. 6

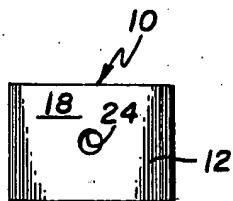


Fig. 7

NEWSPAPER HOLDER**BACKGROUND OF THE INVENTION**

Traditionally, newspaper boys have delivered their papers by dropping the newspaper outside of the principle door of the residence. Sometimes the newspaper is rolled to form an elongated package that may be easily thrown. The deposit of the rolled newspaper in front of the door subjects it to a number of hazards. A puddle of rain water may exist on the porch or a small dog may treat the newspaper as a plaything. The most depressing problem, however, is that of pilferage, and this is particularly prevalent in apartment houses and in hotels, because someone may steal the newspaper even if the occupant is still in the residence. The delivery person bears the blame for the subscriber not getting a newspaper, and often must bear the cost and inconvenience of redelivery. In hotels there is not only the possibility of the newspaper being stolen, but, in those hotels where newspapers are delivered daily as a matter of courtesy, those newspapers which are not picked up by the occupant, lay around on the floor all day long where they not only present an unsightly appearance, but also interfere with the housekeeping duties, particularly with the vacuuming of the rug. These and other difficulties experienced with the prior art devices have been obviated in a novel manner by the present invention.

It is, therefore, an outstanding object of the invention to provide a holder for newspaper or the like which maintains the newspaper out-of-contact with the floor and/or weather conditions in front of the door.

Another object of this invention is the provision of a newspaper holder which reduces pilferage by persons passing by.

A further object of the present invention is the provision of a newspaper holder for use with a door which holder may be removed and stored between delivery times.

It is another object of the instant invention to provide a holder for newspapers which is operative on a door without damage to the finish of the door.

A still further object of the invention is the provision of a newspaper holder which renders a signal inside of the door when removal of the newspaper takes place.

It is a further object of the invention to provide a newspaper holder which is simple in construction, which is inexpensive to manufacture, and which is capable of a long life of useful service.

With these and other objects in view, as will be apparent to those skilled in the art, the invention resides in the combination of parts set forth in the specification and covered by the claims appended hereto.

SUMMARY OF THE INVENTION

In general, the invention consists of a newspaper holder for use on a door, the holder having a clip adapted to engage and grasp the edge of the door. A bow extends from the clip across the surface of the door and has an outer end that engages the surface of the door with substantial force.

More specifically, the holder is formed integrally from an elongated strip of polished stainless steel. The removal of the newspaper from the bow causes the outer end of the bow to strike the surface of the door with sufficient force to cause an audible sound. The ability of the holder to keep the newspaper off of the floor in front of the outside door eliminates much of the

damage to the newspaper caused by adverse weather conditions.

BRIEF DESCRIPTION OF THE DRAWINGS

The character of the invention, however, may be best understood by reference to one of its structural forms, as illustrated by the accompanying drawings, in which:

FIG. 1 is a front elevational view of the paperholder embodying the principles of the present invention in use with a door,

FIG. 2 is a perspective view of the holder,

FIGS. 3-7 are a front elevational view, a rear elevational view, a top plan view, a left-side elevational view, and a right-side elevational view, respectively of the holder.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring first to FIG. 1, wherein are best shown the general features of the invention, the holder, indicated generally by the reference numeral 10, is shown attached to the edge 13 of the door 11. A newspaper 23 is held by the holder against the outer surface 15 of the door.

FIGS. 2-7 show the details of the newspaper holder. The holder is provided with a clip 12 which is adapted to engage and grip the edge of a door. The holder is also provided with a bow 14 extending from the clip across the outer surface of the door and has an outer end 16 that engages the surface of the door with substantial pressure. In the preferred embodiment, the clip is integrally formed from a single strip of polished stainless steel sheet.

The clip 12 is generally U-shaped and consists of a first leg 17 adapted to lie against the inner surface of the door, a base 18 adapted to lie flat against the edge surface of the door, and a second leg 19 adapted to lie against the outer surface of the door adjacent the edge. The free end of the first leg 17 is provided with a portion 21 which is curved outwardly to prevent damage to the surface of the door and to make it easier to slide the clip over the edge of the door. The inner surface may be provided with a thin sheet of cork to further prevent scratching of the door. The outer end 16 of the bow 14 is provided with a similar portion 22 curved away from the outer surface 15 of the door. It has been found that the clip is more effective in holding very large newspapers if portion 22 is provided with additional weight and the bow is particularly long. The first leg 17 and the second leg 19 of the clip 12 are inclined toward one another to provide a substantial clamping force when applied to the edge of the door. The second leg 19 of the clip is straight and the outer end 16 of the bow lies on an imaginary extension of the second leg, as is evident in FIG. 5. The first leg 17 of the clip is also straight and the outer end 16 of the bow also lies on an imaginary extension of the first leg. In a more expensive version, the stiffness of the second leg 19 will be reduced at the joint between the inner straight length and the bow 14 by making the material thinner or narrower at that joint. In this way, the straight length tends to stay against the door when the bow is flexed.

An aperture 24 is provided through the center of the base 18 of the clip to facilitate storage of the holder when it is not in use. As is best evident in FIG. 5, the bow 14 is bent in the form of an arc of a circle. The aperture may also be used with a screw or other fastener.

to semi-permanently attach the clip to the door without defacing either the inner or outer surface of the door.

The operation and advantages of the present invention will now be readily understood in view of the above description. It is contemplated that the holder would normally be stored in the interior of the residence, possibly by being hung on a hook on the inner surface of the door. It could, of course, be used permanently by making use of the aperture 24 to mount the clamp on the edge of the door by means of a screw. In either case. 10 The holder is applied to the edge of the door and, once it has been so applied, the newspaper boy can slip the newspaper into the bow 14, preferably in a vertical position, as shown in FIG. 1. When the occupant of the residence opens the door, he is able to lift the newspaper 15 out of the holder very easily. If, however, anyone attempts to remove the newspaper, the outer end 16 with its curved portion 22 will, because of the resilience of the bow 14, be caused to strike the surface 15 of the door. Because of the construction of doors in general, 20 any slight noise of this type will be clearly heard in the interior of the residence and the occupant will be warned of the attempted stealing of the newspaper.

Thus, it can be seen that not only will the newspaper be held in a high position away from the floor and 25 weather hazards and will have a respectable appearance, but the possibility of pilferage or damage by weather is substantially reduced. Because of the rugged nature of the holder in general, it has a long life. When the door is closed the holder itself cannot be stolen, 30 because of the manner in which the clip surrounds the edge of the door. Nevertheless, the holder does not mar the appearance of the door in any way and, as a matter of fact, it is contemplated that the holder could be removed from the door at all times except during newspaper delivery times. The absence of the holder might be 35 a signal that the newspaper is not desired.

It is contemplated that the device will be produced in a number of different sizes to fit different thicknesses of door and to hold different sizes of newspaper.

It is obvious that minor changes may be made in the form and construction of the invention without departing from the material spirit thereof. It is not, however,

desired to confine the invention to the exact form herein shown and described, but it is desired to include all such as properly come within the scope claimed.

The invention having been thus described, what is claimed as new and desired to secure by Letters Patent is:

1. Newspaper holder for use on a door, comprising:
 - (a) a generally U-shaped clip consisting of a first leg, adapted to lie against the inner surface of the door, a base adapted to lie against the edge surface of the door, and a second leg adapted to lie against the outer surface of the door, the legs of the clip converging toward one another away from the base to provide a substantial clamping force when applied to the edge of the door, and
 - (b) a bow extending from the clip across the surface of the door and having an outer end that engages the surface of the door with substantial pressure, the clip and the bow being integrally formed from a single strip of material, the free end of the first leg being provided with a portion bent outwardly to prevent damage to the surface of the door and the free end of the bow being provided with a similar portion curved away from the surface of the door, being formed in the base of the clip to enable the holder to be fixed to the end of the door and facilitate storage of the holder when it is not in use.
2. Newspaper holder as recited in claim 1, wherein the material is polished stainless steel and the removal of a newspaper from the bow causes the outer end of the bow to strike the surface of the door with sufficient force to cause an audible sound.
3. Newspaper holder as recited in claim 1, wherein the second leg of the clip is straight and the outer end of the bow lies on an imaginary extension of the second leg.
4. Newspaper holder as recited in claim 3, wherein the first leg of the clip is straight and the outer end of the bow lies on an imaginary extension of the first leg.
5. Newspaper holder as recited in claim 1, wherein the bow is bent in the form of an arc of a circle.

United States Patent [19]
Hurrelbrink

[11] **Patent Number:** Des. 304,545
[45] **Date of Patent:** * Nov. 14, 1989

[54] **COAT HANGER RACK**

[75] **Inventor:** Harold K. Hurrelbrink, Hinsdale, Ill.
[73] **Assignee:** Magnuson Group, Burr Ridge, Ill.
[**] **Term:** 14 Years
[21] **Appl. No.:** 855,774

[22] **Filed:** Aug. 25, 1986

[52] **U.S. Cl.** D8/373; D8/367
[58] **Field of Search** D8/354, 367, 371, 372,
D8/373; 248/215, 340, 301, 316.7

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Primary Examiner—Horace B. Fay, Jr.

Attorney, Agent, or Firm—Donald A. Peterson; Herbert D. Hart, III

[57] **CLAIM**

The ornamental design for a coat hanger rack, as shown and described.

DESCRIPTION

FIG. 1 is a left side, top and front perspective view of a coat hanger rack showing my new design;

FIG. 2 is a top plan view thereof;

FIG. 3 is a front elevational view thereof;

FIG. 4 is a right side elevational view thereof, the side opposite being a mirror image;

FIG. 5 is a rear elevational view thereof;

FIG. 6 is a bottom plan view thereof;

FIG. 7 is a left, top and front perspective view of a second embodiment thereof;

FIG. 8 is a top plan view thereof;

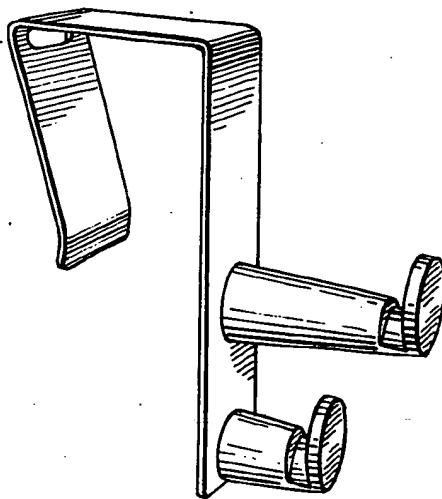
FIG. 9 is a front elevational view thereof;

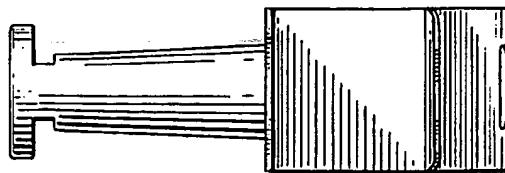
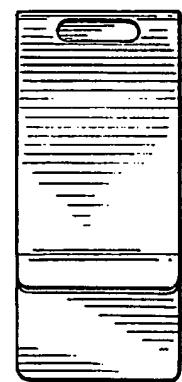
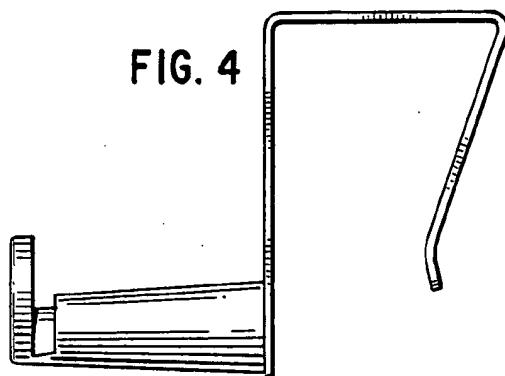
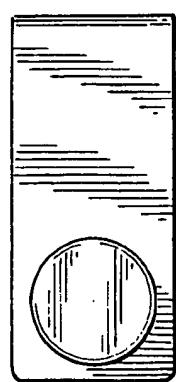
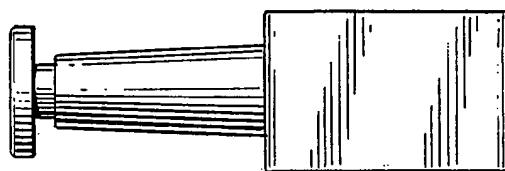
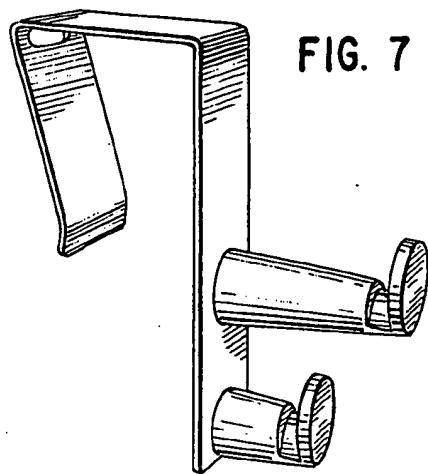
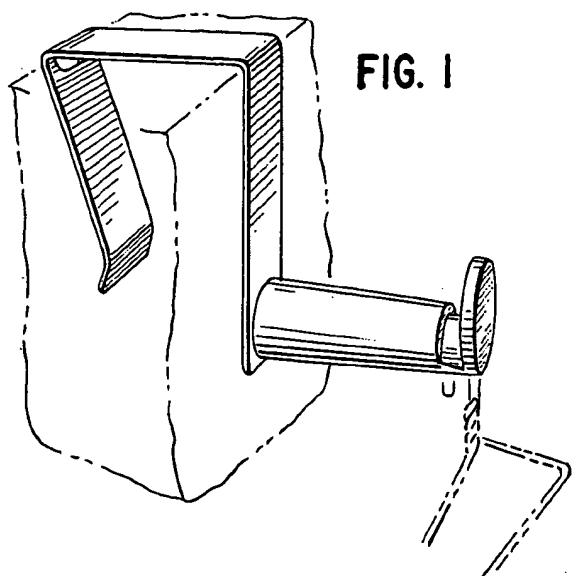
FIG. 10 is a right side elevational view thereof, the side opposite being a mirror image;

FIG. 11 is a rear elevational view thereof; and

FIG. 12 is a bottom plan view thereof.

The broken line showing of a partition and coat hanger in FIG. 1 is for illustrative purposes only and forms no part of the claimed design.





U.S. Patent

Nov. 14, 1989

Sheet 2 of 2

D304,545

FIG. 8

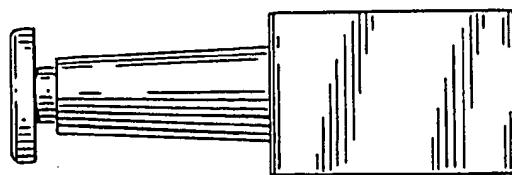


FIG. 9

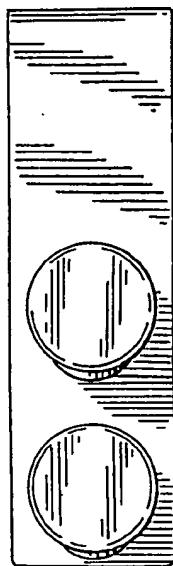


FIG. 10

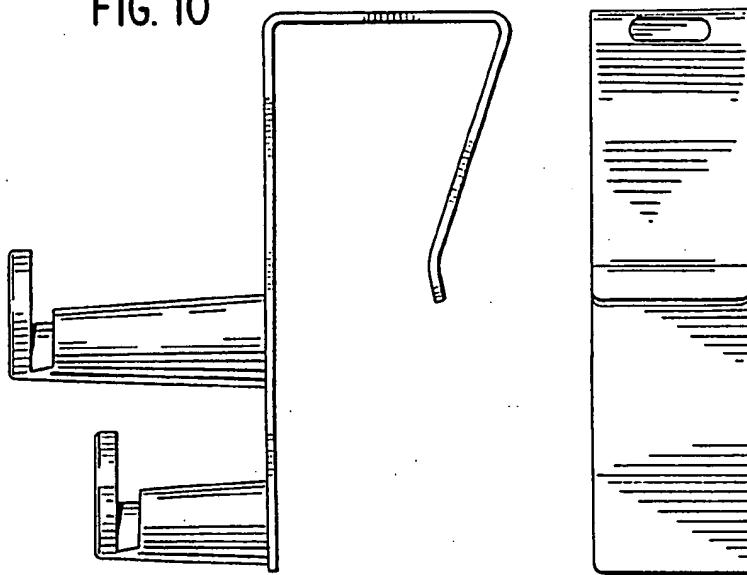


FIG. 11

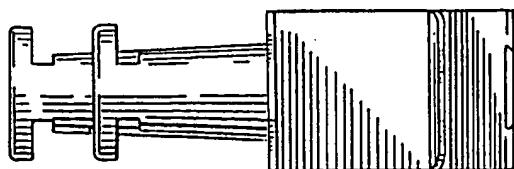


FIG. 12



US006299118B1

(12) United States Patent
Farrell(10) Patent No.: US 6,299,118 B1
(45) Date of Patent: Oct. 9, 2001

(54) PLANT HOLDER

(76) Inventor: Brian P. Farrell, 9130 N. Rexleigh Dr.,
Bayside, WI (US) 53217(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/507,984

(22) Filed: Feb. 18, 2000

Related U.S. Application Data

(60) Provisional application No. 60/164,588, filed on Nov. 10,
1999.(51) Int. Cl.⁷ A01G 9/02(52) U.S. Cl. 248/327; 248/317; 248/323;
248/339; 47/67(58) Field of Search 248/317, 318,
248/323, 327, 339, 340; 47/67

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Primary Examiner—Leslie A. Braun

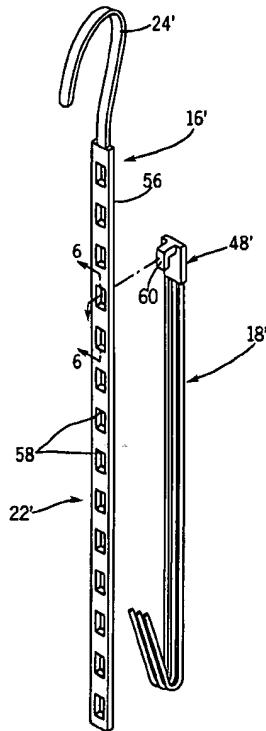
Assistant Examiner—Steven Marsh

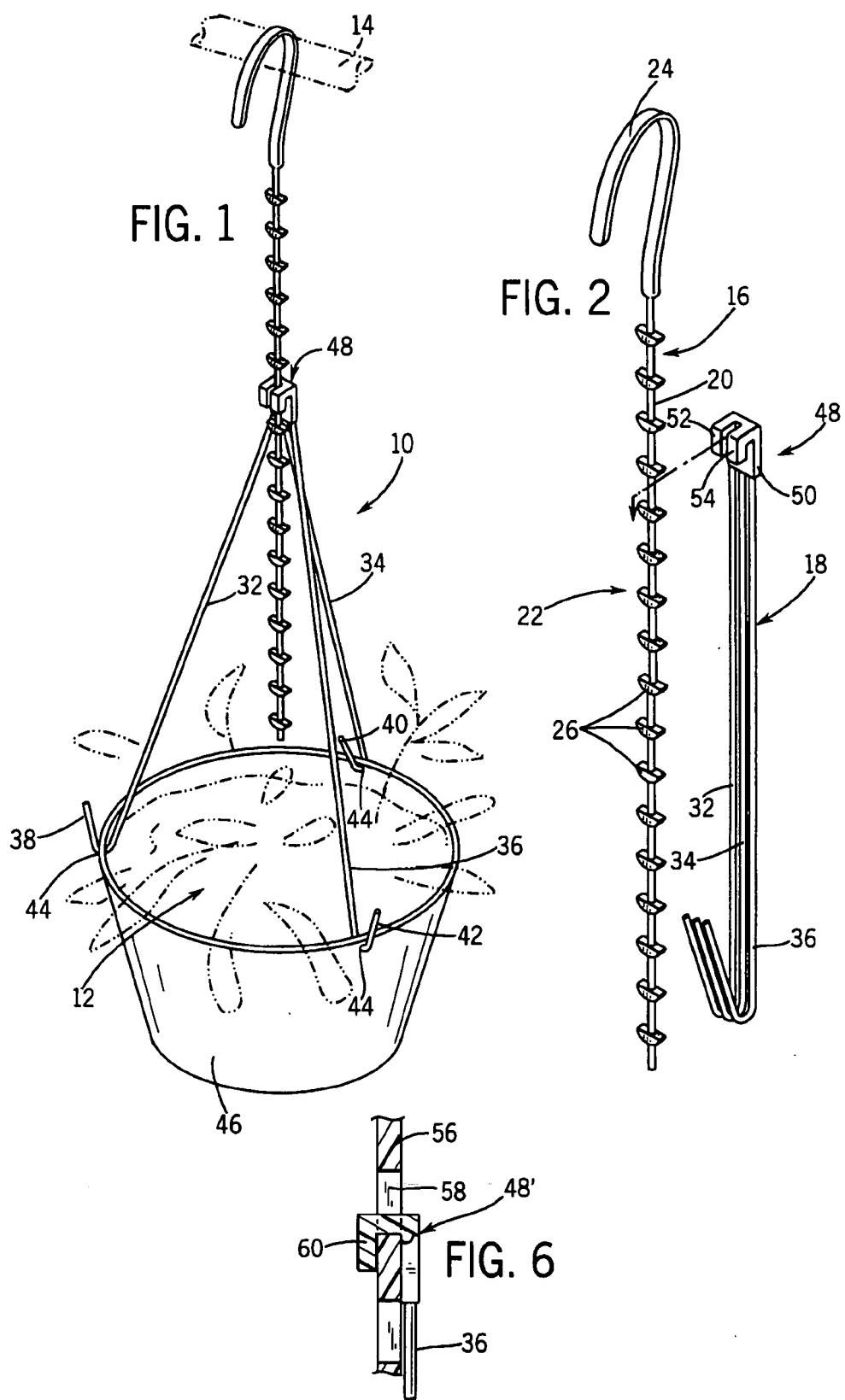
(74) Attorney, Agent, or Firm—Andrus, Sceales, Starke & Sawall, LLP

(57) ABSTRACT

A plant hanger is provided for adjustably supporting an article, such as a potted plant and a plant holder along a vertical axis. The plant hanger includes a first piece having an elongated body provided with a support arrangement spaced therealong, and a hook at one end thereof adapted to be suspended from a support structure. A second piece has a series of flexible rods provided at one end with bent portions adapted to engage and support the plant holder and provided at the other end with a common hook bracket adapted to be engaged with the support arrangement.

6 Claims, 2 Drawing Sheets





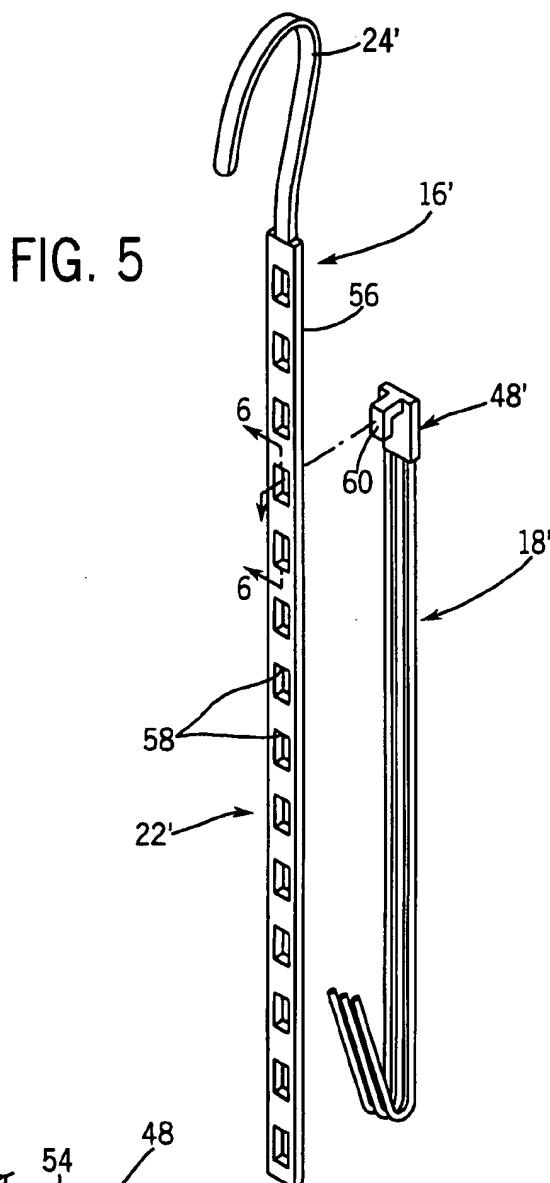


FIG. 5

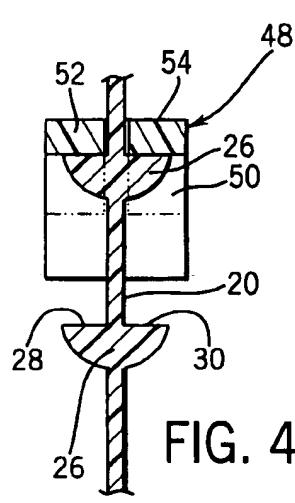


FIG. 4

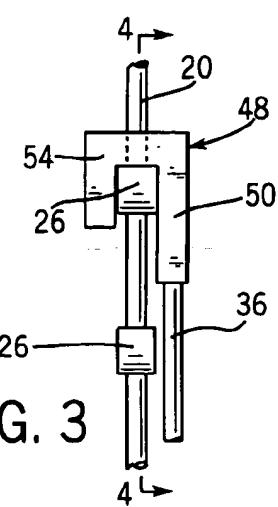


FIG. 3

1

PLANT HOLDER**CROSS-REFERENCE TO RELATED APPLICATIONS**

This application is related to Provisional Application U.S. Ser. No. 60/164,588, filed Nov. 10, 1999.

FIELD OF THE INVENTION

This invention relates broadly to improvements in hanger assemblies for articles such as plant holders, flower pots, and the like. More particularly, the invention pertains to an easily assembled and installable suspension system used to adjustably support a plant holder, or the like, along a vertical axis.

BACKGROUND OF THE INVENTION

Hanging plant holders typically employ a non-adjustable set of support stands such as wires, cables, ropes, cords or chains attached to the plant holder at one end of the support strands and to the usual ceiling hook or other support element at the other end of the support strands. Irrigation and maintenance of the contained plants is at times inconvenient, especially if the plant holder is suspended adjacent the ceiling and the ceiling is high.

The height of plant holders has been adjustable, however, by means of various structures. In U.S. Pat. No. 4,669,693, issued Jun. 2, 1986 to Kagan, there is disclosed a plant hanger and a take-up reel for winding up cables supporting the hanger. A lock is provided below the reel to prevent rotational forces from being exerted about the hanger.

In U.S. Pat. No. 4,825,589, issued May 2, 1989 to Straw et al, there is set forth a hanging plant carrier providing a supporting surface on which a potted plant is placed. Below the supporting surface is a spring-powered reel for providing a means of lengthening the support cables extending from an overhead fixed structure.

In U.S. Pat. No. 4,875,653, issued Oct. 24, 1989 to Connolly, an article suspension system is provided for raising, lowering and suspending an article such as a plant on a cord at selected positions of static and dynamic suspension. The system includes an article hook device, locking handle structure and a cord lock for suspension from one or more pulley supports.

In U.S. Pat. No. 4,957,937, issued Sep. 18, 1990 to Haddox, there is shown a hanger adapted for supporting a plant container from a fixed support. The hanger comprises a plurality of flexible straps having upper reaches terminating in upper extremities adapted for connection to the fixed support, and lower reaches terminating in lower extremities adapted for disposition adjacent the plant container. The effective length of each strap is adjustable and dependent on the adjustment of other straps for varying the vertical position of the plant relative to the fixed support.

Despite the attempts of the prior art, there continues to be a need for a simplified, vertically adjustable plant hanger which can be manufactured at a low cost and yet provides adequate support and also is aesthetically pleasing.

SUMMARY OF THE INVENTION

It is one object of the present invention to provide a hanger which is capable of conveniently altering the elevation of a potted plant with respect to a support structure.

It is also an object of the present invention to provide a plant hanger which is capable of suspending plant containers of various sizes.

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It is another object of the present invention to provide a suspension system for supporting potted plants and other devices therefrom.

It is another object of the present invention to provide a pair of elongated hanger components which can be quickly and easily employed to change the elevation of a potted plant.

It is still another object of the present invention to provide a plant hanger which is adjustable along a vertical axis without special tools or complex, unsightly adjustments.

It is a further object of the present invention to provide a plant hanger which is economically produced with a minimum of components.

It is an additional object of the present invention to provide a plant hanger which is easy to relocate.

Still another object of the present invention is to provide an improved potted plant assembly for use in indoor and outdoor plant display.

Yet another object of the present invention is to provide a plant hanger which is lightweight and yet extremely strong in suspending potted plants therefrom.

A final object of the present invention is to provide a sleek plant hanger in accordance with the proceeding objects and which will conform to conventional forms of manufacture, be of simple construction, and easy to use so as to provide a device which is economically feasible, long lasting and trouble-free in operation.

In one object of the present invention, a plant hanger is provided for adjustably supporting an article, such as a potted plant, in a plant holder along a vertical axis. The plant hanger includes a first piece having an elongated body provided with a support arrangement spaced therealong, and a hook at one end thereof adapted to be suspended from a support structure. A second piece has a series of flexible rods provided at one end with bent portions adapted to engage and support the plant holder and provided at another end with a common hook bracket adapted to be engaged with the support arrangement.

In the preferred embodiment, the body is a shaft and the support arrangement is defined by a plurality of tangs spaced along the shaft. Each of the tangs has a semi-circular cross section. The hook bracket has an inverted L-shape and includes a pair of spaced fingers, each being supported on one side of a selected tang. In an alternative embodiment, the body is a strip formed with a series of aligned openings. The hook bracket includes a single finger engageable with the wall of any one of the openings.

In another aspect of the invention, a method is provided for adjustably supporting an article such as a potted plant in a plant holder along a vertical axis.

Various other objects, features, and advantages of the invention will be made apparent from the following description taken together with the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The drawings illustrate the best mode presently contemplated of carrying out the invention.

In the drawings:

FIG. 1 is perspective of the plant hanger embodying the invention;

FIG. 2 is an exploded, perspective view of the components of the plant hanger in FIG. 1;

FIG. 3 is a fragmentary side view of the plant hanger shown in FIG. 1;

FIG. 4 is a sectional view of the plant hanger taken on line 4—4 of FIG. 3;

FIG. 5 is an exploded view of an alternative embodiment of the invention; and

FIG. 6 is a sectional view taken on line 6—6 of FIG. 5.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings, there is shown in FIG. 1, a plant hanger 10 for adjustably suspending a potted plant 12 from a support structure 14 which is shown as a rod, but could take the form of a hook or other suitable element. Although the present invention is described in terms of a horizontal or overhead support structure, it should be understood that the support structure could also be a vertical or angulated wall or the like.

Plant hanger 10 is comprised of two support pieces 16, 18 which are engageable together in a suspended relationship. The first piece 16 has an elongated body or shaft 20 provided with a support arrangement 22 spaced therealong, and a downwardly opening hook 24 at an upper end thereof which is adapted to be suspended from the rod 14. In the preferred embodiment, the support arrangement 22 takes the form of a plurality of support tangs 26 spaced apart over substantially the entire length of the shaft 20. Each of the tangs 26 has a semi-circular cross section including upper support surfaces 28, 30 on each side of the shaft 20.

The second piece 18 includes a series of three flexible, elongated rods 32, 34, 36, provided at their lower ends with portions 38, 40, 42, bent upwardly at an acute angle relative to the remainder of the rods. The distal ends of the bent portions 38, 40, 42, are adapted to be engaged with holes 44 or hooks (not shown) normally provided in the upper rim of a plant holder 46 for containing the potted plant 12 therein. The flexible rods 32, 34, 36, are commonly connected at their upper ends by a common hook bracket 48. In the preferred embodiment, the hook bracket 48 has a rectangular base 50 integrally formed with a pair of spaced apart fingers 52, 54, each of which has an L-shaped cross section. As seen in FIGS. 3 and 4, the fingers 52, 54 are adapted to hang from the upper support surfaces 28, 30 of a selected tang 26, each tang defining a vertical display position relative to the ceiling. Both the first and second pieces 16, 18 of the planter retainer are preferably formed from a plastic material which is lightweight, and strong and durable enough to support various sized potted plants.

The first and second pieces 16, 18 are employed in a method for adjustably supporting an article such as a plant holder 46, along a vertical axis such as defined by the longitudinal axis of the first piece 16. In use, one engages the hook 24 of the first piece 16 with the rod 14 such that the shaft 20 is supported vertically therefrom. Then, one manipulates the flexible rods 32, 34, 36, of the second piece 18, such that the plant holder 46 is engaged with and supported from the bent portions 38, 40, 42. That is, the bent portions are normally inserted into preformed holes 44 or hooks on the rim of the plant holder 46. Finally, the fingers 52, 54 of the hook bracket 48 are engaged over a selected tang 26 so that the plant holder 46 is supportively positioned at a desired height or elevation relative to the support structure.

In an alternative embodiment shown in FIG. 5, the first piece 16' has an elongated body in the form of a strip 56

formed with a series of aligned openings 58 spaced therealong which defines the support arrangement 22'. A hook 24' is again provided in the upper end of the first piece 16'. The second piece 18' is identical to piece 18 except that the hook bracket 48' is formed from a single finger 60 which is engaged with the wall of one of the selected openings 58.

The present invention thus provides a versatile, simplified hanger capable of changing the elevation of an article suspended therefrom. In the preferred embodiment, the hanger is especially attractive in displaying potted plants, but it can be appreciated that the hanger could likewise be used to suspend bird feeders, lanterns, wind chimes, etc. at varying heights. The first and second pieces can be constructed of various lengths and strengths as desired.

Unlike the prior art plant hangers utilizing pulleys and straps, the present invention has an intrinsically simplified construction which is inexpensive to manufacture and extremely easy to install. The present invention allows for conveniently watering and maintaining plants by allowing the potted plants to be quickly relocated to a lower elevation after which they can be repositioned.

While the invention has been described with reference to a preferred embodiment, those skilled in the art will appreciate that certain substitutions, alterations and omissions may be made without departing from the spirit thereof. Accordingly, the foregoing description is meant to be exemplary only, and should not be deemed limitative on the scope of the invention set forth with the following claims.

I claim:

1. A plant hanger for adjustably supporting an article such as a potted plant in a plant holder along a vertical axis, the hanger comprising:

a first piece having an elongated body provided with a support arrangement spaced therealong and a hook at one end thereof adapted to be supported from a support structure; and

a second piece having a series of flexible rods provided at one end with bent portions adapted to engage and support the plant holder, and provided at another end with a hook bracket adapted to be engaged with the support arrangement wherein the elongated body is a strip formed with a series of aligned openings, each having a surrounding wall, and wherein the hook bracket includes a single finger engageable with the wall of any of the openings.

2. The plant hanger of claim 1, wherein the first piece has an elongated body in the form of a shaft.

3. The plant hanger of claim 1, wherein each of the bent portions of the flexible rods is bent upwardly at an acute angle relative to the remainder of the rod.

4. The plant hanger of claim 1, wherein the first piece and the second piece are constructed of plastic material.

5. The plant hanger of claim 1, wherein each opening defines a vertical display position relative to the support structure.

6. A method for adjustably supporting an article such as a plant holder from a support structure along a vertical axis, the method comprising the steps of:

supplying a first piece having an elongated strip body provided with a support arrangement in the form of a series of aligned openings, each having a surrounding wall spaced therealong, and a hook at one end thereof adapted to be supported from the support structure;

supplying a second piece having a series of flexible rods provided at one end with bent portions adapted to

engage and support the plant holder, and provided at another end with a hook bracket adapted to be engaged with the support arrangement, the hook bracket being in the form of a single finger engageable with the wall of any of the openings; ⁵
engaging the hook of the first piece with the support structure such that the first piece is supported vertically therefrom;

manipulating the flexible rods of the second piece such that the plant holder is engaged with and supported from the bent portions; and
engaging the hook bracket with the support arrangement so that the plant holder is supportively positioned at a desired elevation relative to the support structure.

* * * * *

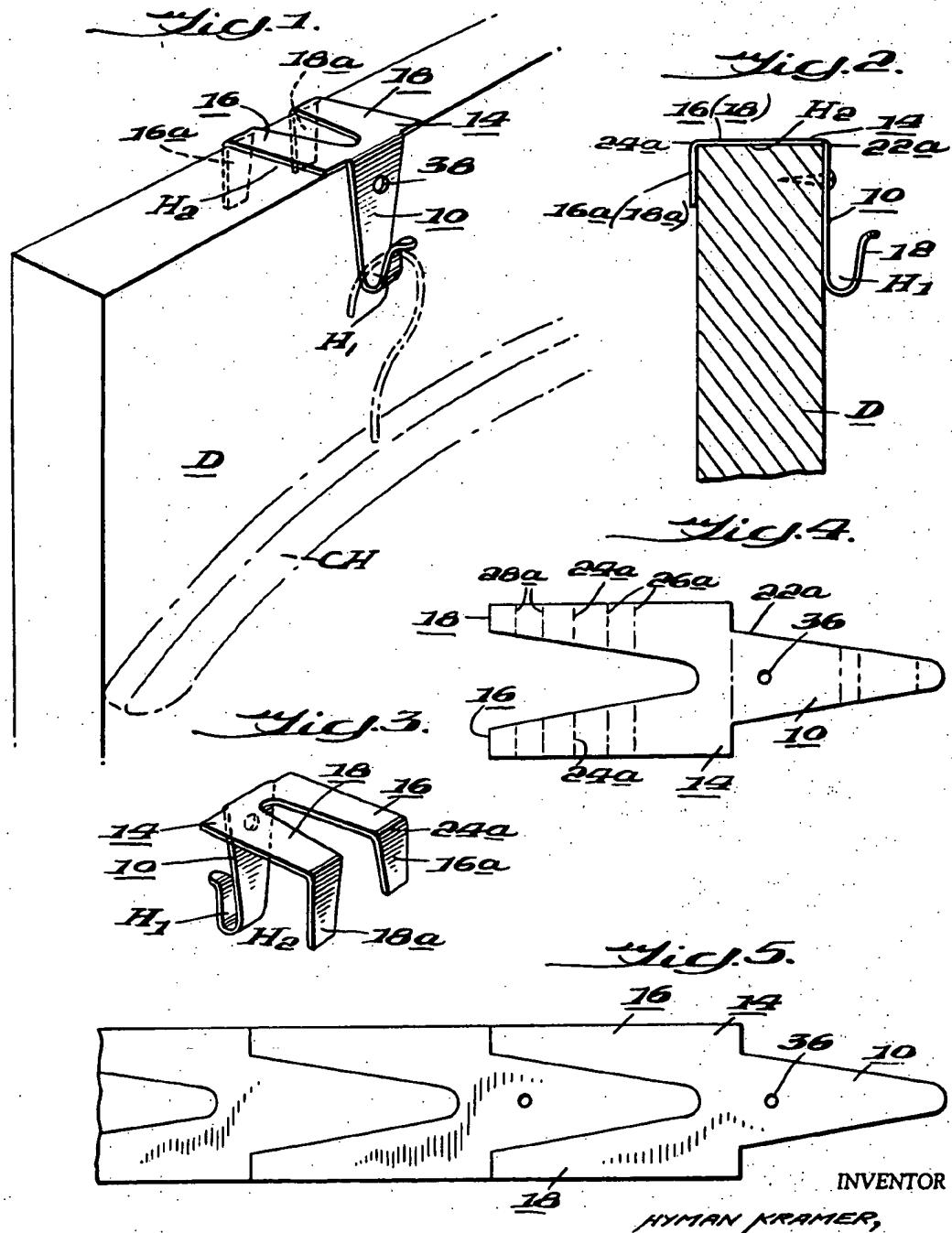
Oct. 27, 1970

H. KRAMER

3,536,287

ARTICLE SUSPENDING HOOKS

Filed March 29, 1968



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ATTORNEY

United States Patent Office

3,536,287
Patent Oct. 27, 1970

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3,536,287

ARTICLE SUSPENDING HOOKS
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Filed Mar. 29, 1968, Ser. No. 717,183
Int. Cl. F16b 45/00

U.S. Cl. 248—301

1 Claim

ABSTRACT OF THE DISCLOSURE

A one-piece, all sheet-metal hook for suspending various articles requiring suspended support from an upwardly facing horizontal edge on a support such as the top edge of a closet door. Said hook, which in side-edge view has the configuration of an inverted U, is formed from a unitary hook blank stamped from sheet-metal strip stock and which provides a hook body portion comprising a full-width, short-length portion of the strip, an elongate first leg extending in one direction from said body portion and providing one leg of the U and whose free end is shaped to provide an upwardly opening hook from which said article may be suspended and said leg having width substantially less than and lateral disposition with respect to said body portion such that its longitudinal center line extends in continuation of that of said body portion, and spaced-apart coplanar legs extending in the opposite direction from said body portion and providing the other leg of the U and being defined along their outer edges by the longitudinal side edges of said strip and whose inner edges define between them a space which is exactly complementary to the edge outline of said elongate first leg.

This invention relates to improvements in article suspending hooks, and more particularly to a hook of novel construction and design which adapts same to be hung from the top edge of a closet door or window sash, for example, or from a wall molding, for supporting articles or things such as clothes hangers, pictures, potted plants, and similar articles requiring suspended support.

Among the several objects of the invention may be noted the provision of a structurally and functionally improved hook; the provision of a hook-on type hook for supporting articles or things requiring suspension-type support; the provision of a hook for supporting articles or things requiring suspended support and which is so constructed and arranged to itself being hung from the top edge of a door or window sash, or from a wall molding, for example; the provision of a hook for the stated purpose characterized by design enabling it to distribute the load which it is required to support between two spaced points disposed symmetrically to its longitudinal center line, as renders the hook very stable under loads which it is called upon to carry; the provision of a sheet-metal hook having the above-stated desirable properties and which is further capable of being blanked out from a strip of suitable sheet material without the formation of any scrap whatsoever, and which accordingly is very economical in manufacture; and the provision of a hook which incorporates within its structure a means whereby it is readily adjustable to different thicknesses of the door, window sash, or wall mounting to which it is to be hooked in use.

The above and other objects and features of advantage of an article supporting hook according to the present invention will be apparent or obvious from the following detailed description and accompanying illustrative drawing thereof, in which

FIG. 1 is a broken-away perspective view of a hook as herein contemplated shown in one of its various "in use"

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positions, i.e. hooked over the top edge of a door such as a clothes closet door;

FIG. 2 is a side view which further illustrates the hook-on capability of a hook according to the invention;

FIG. 3 is a perspective view taken from the rear of the hook shown in FIG. 1;

FIG. 4 is a plan view of a blank from which the hook shown in the preceding views is formed prior to its being bent to final double-hook formation; and

FIG. 5 is a broken-away plan view illustrating the manner in which hooks according to the invention, when made from sheet material, may be blanked out from a strip of such material without the formation of any appreciable scrap.

10 Referring to the drawing in detail, a hook according to the invention, when made from a suitable sheet material, i.e. sheet metal, is so fashioned as to combine into one hook structure blanked out from a longitudinal strip of said sheet metal an upwardly opening hook generally designated H₁ and offset rearwardly therefrom a downwardly opening hook generally designated H₂. As seen in FIG. 1, said upwardly opening hook H₁ is formed by the free end portion of a longitudinal leg 10 which is bent transversely of its length to U-formation, thus to form a hook with a flared bill designated 12. The other end of said leg 10 integrally connects with a widened and straight-edged hook body portion designated 14, from which extends, in direction opposite to the direction of extension therefrom of the aforesaid leg 10, the spaced-apart legs 16, 18, whose outer side edges extend collinearly with the outer side edges of said widened body portion.

15 As best seen in FIG. 2, the aforesaid leg portion 10, which preferably has lesser width than the body portion 14 and whose lateral disposition with respect to said body portion is such that its longitudinal center line extends in continuation of the longitudinal center line of said body portion, is bent at a right angle to said body portion along a bend line designated 22a corresponding to the line of its junction therewith and thus, when said body portion is horizontally disposed and turned so that its leg 10 extends downwardly therefrom, the aforesaid U-bent hook 12 will open or face in upward direction.

20 The terminal or free-end portions 16a, 18a of the spaced-apart legs are bent along a common transverse line of bend 24a to extend at a right angle to the root portions of said legs, i.e. the portions which connect to the aforesaid body portion 14 of the hook, with said bending being in direction such that said terminal portions extend in a plane parallel with that of the aforesaid leg 10 after the latter is bent at a right angle to said body portion. Thus, said bent-over terminal portions 16a, 18a of the legs 16 and 18, the root portions of said legs, the hook body portion 14, and the leg 10 combine to form the aforementioned downwardly opening or facing hook H₂. As is well shown in FIGS. 1 and 2, the provision of said hook H₂ renders the hook proper H capable of being attached to a supporting member such as the top edge of a closet door designated D or of a window sash or the upwardly projecting edge of a wall molding, by being hooked thereto.

25 By reference to FIG. 4 in particular, it will be seen that in addition to the common transverse line of bend 24a (such being the actual line of bend of the terminal leg portions 16a, 16b with respect to the leg root portions), the legs 16 and 18 are provided with a plurality of potential bend lines (indicated by the broken lines 26a, 28a, FIG. 4) which may be formed by cross-scoring said legs. Such score lines enable ready bending of the terminal leg portions 16a, 18a with respect to the root portions of said legs at various distances from the line of bend 22a between the leg 10 and body portion 14 of the hook, thus

enabling the downwardly facing hook H_2 to be closely fitted to a door of particular thickness.

These score lines 26a, 28a may also be employed to shorten the length of the legs 16, 18, as adapts the hook to be hooked over a narrow-width edge, such as that of a wall molding, rather than the top edge of a relatively thick door, as in FIGS. 1 and 2. In explanation, the score line indicate lines of severance to uniformly shorten the length of the legs 16 and 18, either by cutting unneeded end portions from the root portions of the legs or enabling removal of the end portions by flexing the same repeatedly back and forth along the particular score line best suited to give the remaining portions of the legs the proper length.

Referring to FIG. 1 which, as above indicated, shows a hook according to the invention in one of its various "in use" positions, in which it is hooked over the top edge of a door, it will be seen that the hook as a whole is favorably positioned to receive the hook of a clothes hanger CH shown in broken lines in FIG. 1. This view also illustrates that by virtue of the legs 16 and 18 which extend over the door edge being spaced laterally from one another and symmetrically to the sides of the longitudinal center line of both the leg 10 and the hook proper, the load or weight which said hook may be called upon to support is distributed at spaced points or lines to the sides of said center line, rather than being concentrated at one point or line as with prior hooks intended to serve the same general function as a hook of the invention. This two-point weight or load distribution results in the hook being very stable when loaded.

Hooks according to the invention may be manufactured and supplied with their aforesaid leg portion 10 and leg-end portions 16a, 18a already bent to or substantially to parallelism (as in FIG. 3) or they may be manufactured and supplied with the legs 16, 18 extending straightway, i.e. unbent, or with said legs and the legs 10 similarly unbent. In the latter cases, the purchaser or installer will bend the leg 10 relative to the body portion 14 and either bend the terminal end portions 16a, 18a so that the hook will fit rather neatly if not snugly over the top edge of the door or, if necessary, will cut or break off the end portions (after initial bending of the legs to hook form) as may be required to fit the hook to a wall molding, for example. A hook according to the invention may be non-permanently attached and merely hung to a door as needed, or it may be permanently attached thereto, for which purpose it is provided with an attaching screw-receiving hole 36 and an attaching screw 38 will be supplied with each hook. Bending of the leg or leg portions as aforesaid may of course be at an angle somewhat greater or less than 90°, as such depends on the particular configuration of the edge from which the hook is to be hung.

By virtue of the fact that the hook as illustrated may be fashioned from sheet material of relatively thin gauge, its mounting to a door in particular by being hooked over the top edge thereof as shown in FIG. 1 will not interfere with normal opening and closing of the door.

A very practical advantage of a hook according to the invention is that it may be inexpensively manufactured by being blanked out complete from sheet-metal strip without the formation of any scrap whatsoever. More particularly, and here referring to FIGS. 4 and 5, it will be seen that each hook leg 10 has length and configuration rendering said leg exactly complementary to the space between its spaced-apart legs 16, 18. In practical effect, such means that a plurality of hooks may be blanked from a strip of sheet stock having exactly the same width as that of the hook body portions 14, with whose side edges the outer side edges of the hook legs 16, 18 exactly coincide. Thus, as is clearly shown in FIG. 5, no scrap whatsoever results.

Preferably, the side edges of the hook legs 10 taper towards one another to a rounded point, and the space 75

between the legs 16 and 18 of the hook blanks is complementally tapered and configured. However, said legs and spaces may be differently configured; for example, the side edges of the legs 10 of the hooks may be formed straight and parallel to one another, with the spaces between the legs 16 and 18 of the blanks being defined by correspondingly straight and parallel side edges.

Without further analysis, it will be appreciated that a hook as described and illustrated satisfies the objectives of the invention as stated in the foregoing. However, as many changes could be made in carrying out the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A one-piece all sheet-metal hook fashioned from sheet-metal strip stock for suspending an article requiring suspended support from an upwardly facing horizontal edge on a support such as the top edge of a clothes-closet door, which comprises: a hook body portion provided by a full-width, short-length portion of said strip, a narrower-width elongate first leg integral with and extending in one direction from said body portion and whose lateral disposition with respect to said body portion is such that its longitudinal center line extends in continuation of that of said body portion, and coplanar spaced-apart legs integral with and extending longitudinally in the opposite direction from said body portion, the outer side edges of said spaced-apart legs being provided by the longitudinal side edges of said strip and the space defined by the inner edges of said legs being exactly complementary in length and configuration to the edge outline of said first leg, said first leg being bent downwardly from said body portion about a transversely extending bend line corresponding to its line of connection therewith to a position in which said first leg extends at a substantial right angle to said body portion and the free end of said first leg being bent upwardly of said leg proper to form therewith an upwardly opening hook, said spaced-apart coplanar legs being provided at stepped distances along their respective lengths with a plurality of horizontally aligned score lines extending thereacross and which define a series of potential transverse bend lines, at least the free end portions of said coplanar spaced-apart legs being bent downwardly at substantial right angles to said body portion about a selected one of said series of transverse bend lines which is spaced from the first-mentioned bend line a distance corresponding substantially to the thickness of said support, said body portion being adapted to lie flat against said upwardly facing edge of the support and said downwardly bent first leg and said downwardly bent end portions of said spaced-apart legs being adapted to lie flat against parallel faces of the said support below said edge.

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ROY D. FRAZIER, Primary Examiner

J. F. FOSS, Assistant Examiner

U.S. Cl. X.R.



US00D360355S

United States Patent [19]
Adams

[11] Patent Number: Des. 360,355
[45] Date of Patent: ** Jul. 18, 1995

[54] WREATH HOOK

- [75] Inventor: William E. Adams, Portersville, Pa.
 [73] Assignee: Adams Mfg. Corp., Portersville, Pa.
 [**] Term: 14 Years
 [21] Appl. No.: 24,889
 [22] Filed: Jun. 23, 1994
 [52] U.S. Cl. D8/367; D8/373
 [58] Field of Search D8/367, 373; 248/288.3,
 248/215, 300-301, 304, 339, 317, 290, 214;
 D6/323, 567

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Primary Examiner—James M. Gandy

Assistant Examiner—Holly Bayham

Attorney, Agent, or Firm—Buchanan Ingersoll; Lynn J. Alstadt

[57] CLAIM

The ornamental design for a wreath hook, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of my design for a wreath hook;

FIG. 2 is a side elevation view thereof with the opposite side being a mirror image;

FIG. 3 is a rear view thereof;

FIG. 4 is a front view thereof;

FIG. 5 is a bottom view thereof; and,

FIG. 6 is a top view thereof.

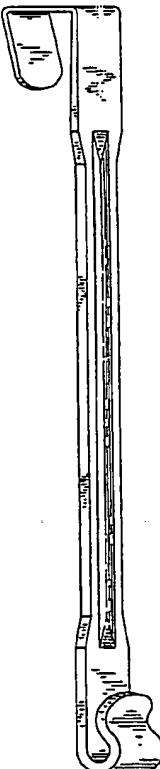


Fig.1.

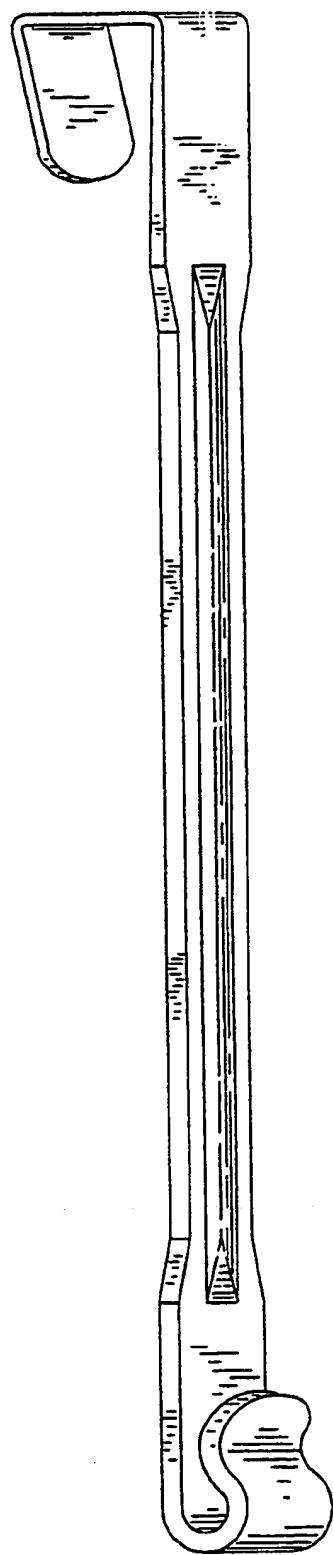


Fig.5.



Fig.6.



Fig.3.



Fig.2.

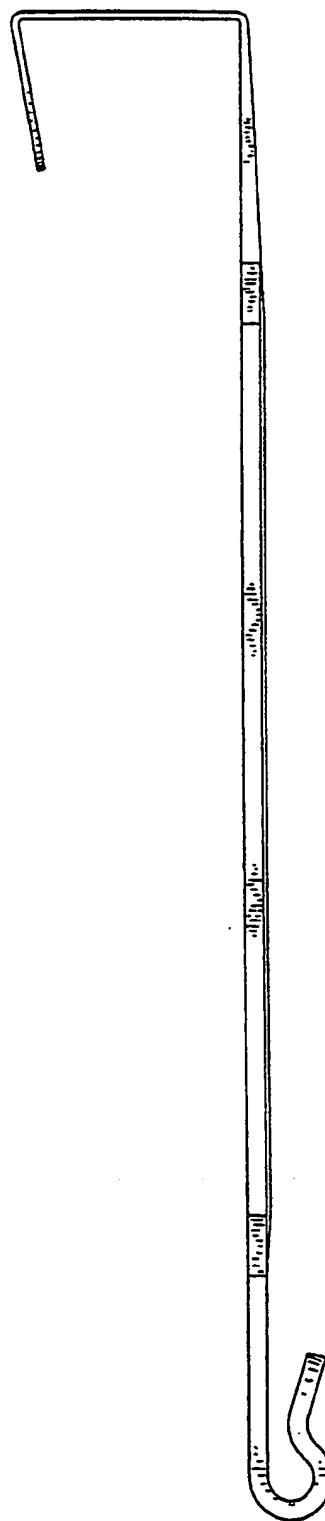
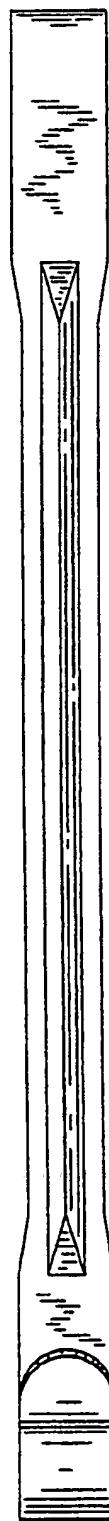


Fig.4.



United States Patent [19]

Downing et al.

[11] 3,891,176

[45] June 24, 1975

[54] HANGER FOR SUSPENDING EXHAUST
PIPES FROM A HORIZONTAL SUPPORT

[75] Inventors: Todd R. Downing; Robert K. Nolen,
both of Chicago, Ill.

[73] Assignee: Maremont Corporation, Chicago,
Ill.

[22] Filed: Nov. 21, 1973

[21] Appl. No.: 418,035

[52] U.S. Cl..... 248/340; 211/119

[51] Int. Cl. A47j 51/142; A47f 5/00; A47j 5/00

[58] Field of Search 248/214, 215, 211, 301,
248/303, 304, 305, 306, 339, 340, 359, 360,
317; 294/86.24; 211/113, 119

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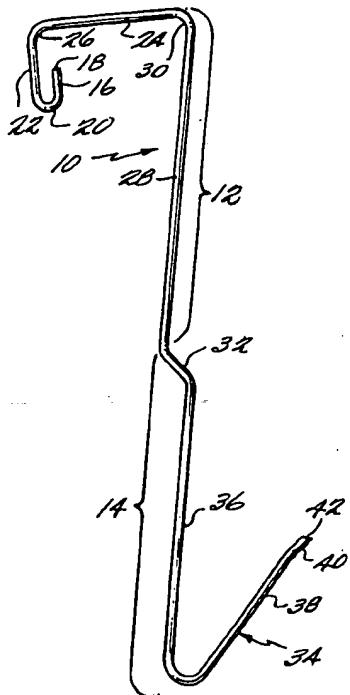
Primary Examiner—J. Franklin Foss
Attorney, Agent, or Firm—Cushman, Darby &
Cushman

[57]

ABSTRACT

A hanger for suspending exhaust pipes and the like from a horizontally extending support comprising an elongated spring steel wire bent to provide a support engaging section and a generally V-shaped pipe engaging section having an outwardly bent pipe gripping tip and a pipe end engaging stop portion, the support engaging section being operable to be engaged in a generally downward direction over the support and including a terminal end portion having an upwardly facing end surface for engaging one side portion of the support and integral portions disposed between the terminal end portion and the pipe engaging section which extend upwardly with respect to the aforesaid one side portion of the support transversely over an upwardly facing portion of the support and downwardly along an opposite side portion of the support, the integral portions having support engaging surfaces operable in response to the suspension of a pipe or the like by engagement with the pipe engaging section for causing the downward force of the pipe load to be transmitted by the integral portions to the terminal end portion in such a way as to tend to move the end surface thereof in a direction upwardly and toward the one side portion of the support an extent which increases as the pipe load increases so that the resultant engagement of the end surface with the one side portion of the support serves to prevent disengagement of the support engaging section from the support.

14 Claims, 4 Drawing Figures



PATENTED JUN 24 1975

3,891,176

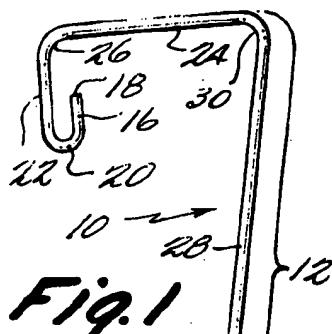


Fig. 1

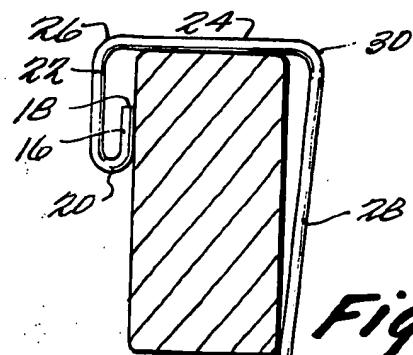


Fig. 2

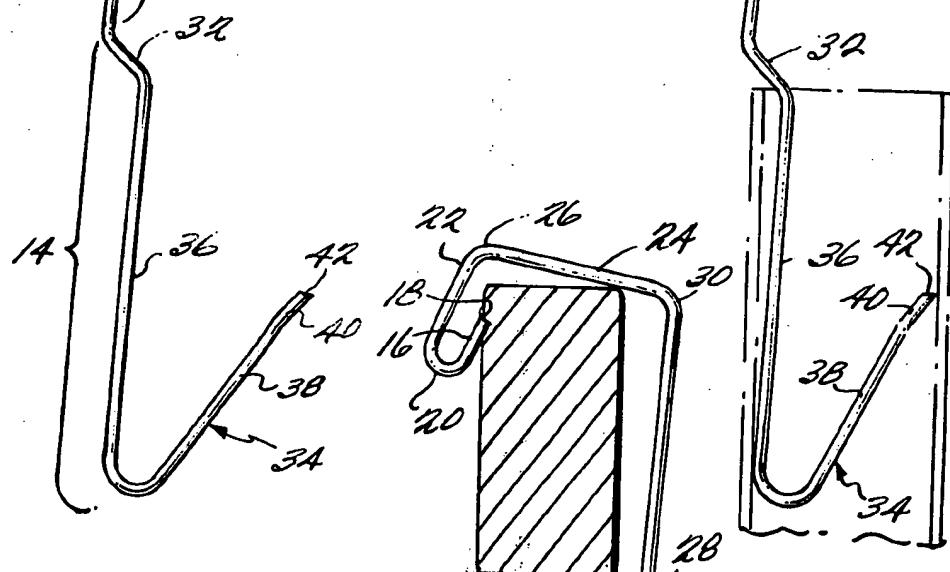


Fig. 3

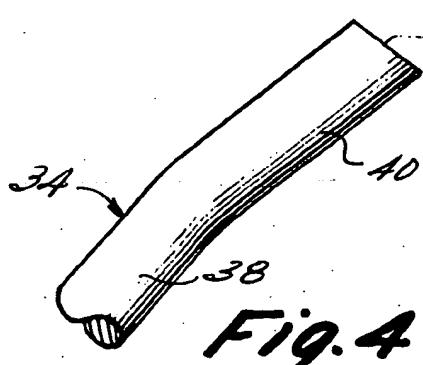
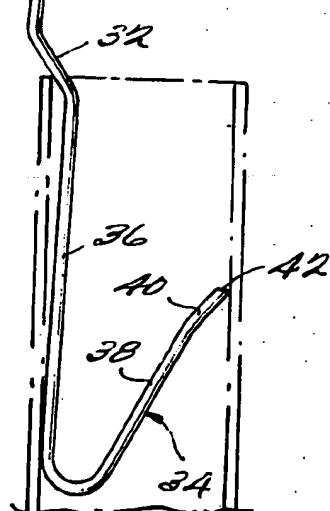


Fig. 4



HANGER FOR SUSPENDING EXHAUST PIPES FROM A HORIZONTAL SUPPORT

This invention relates to hangers and more particularly to hangers for suspending exhaust pipes and the like from a horizontally extending support.

In the merchandising of exhaust system parts, it has been the practice for many years to inventory exhaust pipes and the like by suspending the same in generally vertically extending relation from horizontally extending supports provided, for example, in the warehouse. In order to effect this suspension, hangers or wire hooks have been used. A typical prior art hanger consists of a length of wire bent to provide an upper support engaging section and a lower pipe engaging section. Typically, the upper support engaging section is simply bent into an inverted U-shaped configuration capable of being simply moved generally downwardly into operative engagement over the support. The lower pipe engaging section is typically of V-shaped configuration capable of being engaged axially inwardly within the open end of an exhaust pipe. During this engagement the legs of the V-shaped pipe engaging section are deflected toward one another by opposed interior peripheral portions of the pipe permitting the end surface of the free leg to engage the interior peripheral surface of the pipe to effect a gripping action resisting separation by a straight axially outward movement. Separation of the pipe from the hook could then be effected by a combined rotational and axially outward movement. In other words, the gripping action effectively prevented straight axial separation but permitted the hook to be simply unscrewed relative to the open pipe end to effect separation.

In actual use, the hangers served to suspend the exhaust pipes from the support until removal was desired. The intended procedure for removal was to lift up on the pipe to disengage the support engaging section of the hanger from the support and then to unscrew the hanger from the pipe. Experience has shown, however, that excessive loads were often applied to the hangers when in operative position as by operators attempting to pull on the pipes or by other unintentional engagements with the suspended pipe. Moreover, this condition was exaggerated by the tendency of exhaust system components to become heavier due to added elements and the like.

It will be understood that when added loads are applied to hanger suspended exhaust pipes an unintentional disengagement of the pipe from the hanger or of the hanger from the support could present a hazardous condition to personnel as well as possible damage to the equipment. Support disengagement usually occurred as a result of the inverted U-shaped support engaging section simply deflecting beyond its elastic limit and letting go. Hanger disengagement occurred as a result of a slippage of the gripping action of the V-shaped pipe engaging section.

An object of the present invention is the provision of a hanger of the type described which will obviate the problems noted above. In accordance with the principles of the present invention, this objective is obtained by forming an upwardly extending terminal end portion on the support engaging section of the hanger for engaging a side portion of the support when the hanger is in operative position thereon. The terminal end portion has an upwardly facing end surface and is so related to

the remaining portions of the pipe engaging section that downward forces applied to the support engaging section, as by the pipe load and other loads, tends to move the end surfaces in a direction upwardly and toward the support side portion into engagement therewith to an extent which increases as the load increases. This action prevents disengagement of the hanger from the support even when loads are applied sufficient to deflect the hanger beyond its elastic limit.

Accordingly, it is a further object of the present invention to provide a hanger of the type described which is constructed and functions in accordance with the principles enunciated above.

Another object of the present invention is the provision of a hanger of the type described having a pipe engaging section of improved construction which is operable to obviate the problems of unwanted hanger-to-pipe separation heretofore encountered in prior art hangers as indicated above. In accordance with the principles of the present invention this objective is obtained by providing a transversely extending stop portion at the upper end of the pipe engaging section for engaging the open pipe end during hanger engagement to insure a proper engaged relationship therebetween and an outwardly bent tip on the free end of the V-shaped portion of the pipe engaging section which enables the hanger to accommodate a wider range of pipe sizes with a more effective gripping action while still providing for effective separation when desired.

Another object of the present invention is the provision of a hanger of the type described having an improved pipe engaging section which is constructed and functions in accordance with the principles enunciated above.

Another object of the present invention is the provision of a hanger of the type described which is simple in construction, effective in operation and economical to manufacture.

These and other objects of the present invention will become more apparent during the course of the following detailed description and appended claims.

The invention may best be understood with reference to the accompanying drawings wherein an illustrative embodiment is shown.

In the drawings:

FIG. 1 is a side elevational view of a hanger embodying the principles of the present invention;

FIG. 2 is a view similar to FIG. 1 illustrating the hanger in its operative pipe suspending position;

FIG. 3 is a view similar to FIG. 2 showing one position of the hanger when an excessive load is applied thereto; and

FIG. 4 is an enlarged fragmentary elevational view of the pipe gripping tip of the hanger.

Referring now more particularly to the drawings, there is shown therein a hanger, generally indicated at 10, for suspending exhaust pipes and the like from a horizontally extending support. The preferred embodiment shown is constructed of a single elongated metallic member formed to provide a support engaging section 12 and a pipe engaging section 14. In the preferred embodiment shown the elongated member is in the form of a hard drawn spring steel wire, a specific example being type HB having a diameter of one-eighth inch.

As shown, the support engaging section 12 includes an upwardly extending substantially straight terminal

end portion 16 having an upwardly facing transverse end surface 18 at the free end thereof. The opposite end of the terminal end portion 16 is integrally interconnected with one end of an arcuate portion 20 of an arcuate extent of approximately 180° which extends downwardly and then outwardly and upwardly from the terminal end portion 16. Integrally interconnected with the opposite end of the arcuate portion 20 is a substantially straight, generally upwardly extending portion 22 which is disposed in generally parallel relation with the terminal end portion 16.

The support engaging section 12 also includes a substantially straight generally horizontally extending portion 24 which is disposed at an angle of approximately 90° with respect to the upwardly extending portion 22 and is integrally connected therewith, as by a bent portion 26. Finally, the support engaging section 12 includes a substantially straight, generally downwardly extending portion 28 which is disposed at an angle of approximately 80° with respect to the horizontally extending portion 24 and is integrally interconnected therewith, as by a bent portion 30.

The pipe engaging section 14 includes a generally transversely extending stop portion 32 which is integrally connected with the downwardly extending portion 28 of the support engaging section 12 and a V-shaped portion, generally indicated at 34, which is integrally connected with the stop portion 32. The V-shaped portion opens upwardly and is formed by a pair of legs 36 and 38 which are preferably of substantially straight configuration and of unequal longitudinal extent. The longer leg 36 is integrally interconnected with the stop portion 32 and the shorter leg 38 has an outwardly bent tip 40 on the free end thereof. As shown, the longer leg 36 extends in a direction generally parallel to the direction of extent of the downwardly extending portion 28 and the leg 38 extends therefrom at an angle of approximately 40°. The leg 38 is disposed outwardly of the leg 36 in a horizontal direction opposed to the outward horizontal direction of extent of the horizontally extending portion 24 with respect to the downwardly extending portion 28 of the support engaging section 12.

The pipe gripping tip 40 is bent outwardly at an angle of approximately 10° with respect to the longitudinal extent of the associated straight leg 38 and includes a planar end surface 42 which intersects with the periphery of the tip. As shown, end surface 42 is disposed in a plane which intersects with the outer peripheral surface of the tip at an included angle of approximately 60°.

As previously indicated, the hanger 10 is specifically constructed for the purpose of suspending exhaust pipes and the like from a horizontally extending support, such as might be found in a warehouse or the like. In actual operation, suspension is effected by the operator grasping a hanger 10 and inserting the pipe engaging section 14 thereof axially inwardly of the open end of the exhaust pipe to be suspended. It will be noted that during this movement of the hanger 10 into the pipe, the extent of axial inward movement is determined when the stop portion 32 of the hanger engages the end of the pipe. It will also be noted that during this movement, the legs 36 and 38 of the V-shaped portion 34 will initially engage opposed portions of the interior periphery of the pipe and be flexed or bent inwardly toward one another until the end surface of the tip passes

into the open end of the pipe. The flexure in the V-shaped portion 34 thus tends to bias the free leg 38 outwardly so that the outer edge defined by the end surface 42 will engage the inner periphery of the pipe. This engagement prevents the pipe from being disengaged from the hanger by a movement which is in the axial outward direction alone. Separation can be effected by imparting a relative motion between the hanger and the pipe which has both a rotational component and an axially outward component. As previously indicated, disengagement is effected by simply unscrewing the hanger pipe engaging section 14 from the pipe.

It is of significance to note that the V-shaped configuration of the legs 36 and 38 and the outwardly bent tip 40 enable the portion 34 to properly function with a wide range of pipe sizes, as, for example, from 1 1/4 inch O.D. pipe to 2 1/2 inch I.D. pipe. The provision of the stop portion 32 is of considerable importance since it insures a simple engagement of the hanger within the pipe at a proper operative position which is neither insufficiently disposed within the open end, or disposed within the open end to an excessive extent.

Suspension of the pipe on the support is completed by the operator grasping the pipe with the hanger 10 engaged within one open end thereof as aforesaid, and then moving the support engaging section 12 thereof over the support and then with a generally downward direction into engagement therewith, as shown in FIG. 2. The construction of the support engaging section 12 of the present hanger is of particularly significant importance in that it enables the pipe to be suspended on the support in a manner which effectively prevents unwanted separation between the hanger and the support due to increased loading, while still permitting a simple and effective disengagement when desired. The construction is also significant in that it is capable of such effective operation with a variety of different support structures, as for example, supports constructed of wooden 2 X 4's, supports constructed of inverted channel irons, and supports constructed of tubular metal stock, both round and square.

The effectiveness of the connection between the support engaging section 12 of the present hanger 10 and supports of the type indicated above was demonstrated by actual tests of the preferred embodiment disclosed above, utilizing one-eighth inch hard drawn spring steel wire type HB. First, it should be noted that a normal pipe load is within the range of 8 to 14 pounds. When the hanger 10 was used with a wooden 2 X 4 support, a load of this type had the effect of slightly moving the end surface 18 upwardly and inwardly into engagement with the side of the 2 X 4. Where excessive pipe loads of the order of 30 to 35 pounds were applied to the hanger, the hanger was deformed into the position such as shown in FIG. 3. It will be noted that a downward load as applied to the portion 28 serves to move the end surface 18 upwardly and inwardly into biting engagement with the side portion of the 2 X 4. The downward load on the portion 28 is transmitted to the terminal end portion 16 through the integral portions interconnected therebetween by virtue of the exterior surface means of these portions engaging the upwardly facing surface of the support. When the hanger was then loaded in increments up to approximately 116 pounds, the upward and inward deflection of the terminal end portion 16 increased with increased load until the end portion had substantially entered the 2 X 4 up to its

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The effectiveness of the connection between the support engaging section 12 of the present hanger 10 and supports of the type indicated above was demonstrated by actual tests of the preferred embodiment disclosed above, utilizing one-eighth inch hard drawn spring steel wire type HB. First, it should be noted that a normal pipe load is within the range of 8 to 14 pounds. When the hanger 10 was used with a wooden 2 X 4 support, a load of this type had the effect of slightly moving the end surface 18 upwardly and inwardly into engagement with the side of the 2 X 4. Where excessive pipe loads of the order of 30 to 35 pounds were applied to the hanger, the hanger was deformed into the position such as shown in FIG. 3. It will be noted that a downward load as applied to the portion 28 serves to move the end surface 18 upwardly and inwardly into biting engagement with the side portion of the 2 X 4. The downward load on the portion 28 is transmitted to the terminal end portion 16 through the integral portions interconnected therebetween by virtue of the exterior surface means of these portions engaging the upwardly facing surface of the support. When the hanger was then loaded in increments up to approximately 116 pounds, the upward and inward deflection of the terminal end portion 16 increased with increased load until the end portion had substantially entered the 2 X 4 up to its

connection with the arcuate portion 20. At 116 pound load the remaining integral portions of the pipe engaging section had deformed beyond the elastic limit of the steel wire. With the 36 pound loading, as indicated in FIG. 3, the elastic limit of the wire was not exceeded and the hanger sprung back into its normal position as shown in FIG. 1, as the load was relieved. With respect to FIG. 3, it will be noted that the engagement of the end surface 18 clearly serves to maintain the connection of the support engaging section 12 with the support. When the load is relieved and the hanger assumes its normal position, separation can be readily accomplished without interference by a simple upward movement. During this movement, the end surface 18 is out of gripping engagement with the side portion of the support and hence does not interfere in any way.

Similar tests with respect to a 2 inch inverted channel iron exhibited similar characteristics at the 16 pound and 36 pound loading. Of course, the end portion 18 did not actually move into the side portion of the channel iron as was the case with the wooden 2 X 4, due to the hardness of the material. Tests with the 2 inch channel further revealed that a loading of up to 141 pounds was effective without separation or even bending of the wire beyond its elastic limit. This effective action could be achieved because of the slightly greater horizontal dimension of a 2 inch channel as compared with the dressed 2 inch dimension of a conventional 2 X 4 and because of the resistance provided by the metal to the movement of the end portion.

When the hanger 10 of the present invention was moved into engagement with a 1½ inch O.D. iron pipe, the loading at 16 pounds and 36 pounds exhibited similar characteristics as comparable loading with a 2 X 4 support and a 2 inch channel support. However, since the exterior support engaging surface of the portion 24 was at the middle of the upwardly facing surface of the support pipe, a greater lever arm was provided which resulted in a substantial deflection of the hanger at 56 pounds load. At 66 pounds load, the deflection was such that the end surface 18 had moved into a position of surface-to-surface contact with the periphery of the pipe at the middle of the upper left-hand quadrant. This engagement continued with the end surface moving toward the upper surface of the pipe even with a loading of 106 pounds, at which point the integral portions of the section 12 had all deflected beyond the elastic limit of the spring steel wire.

It can thus be seen that there has been provided a hanger which will effectively prevent unwanted disengagement heretofore experienced in prior art hangers of this type, while at the same time permitting desired disengagement with great ease and facility. These results are achieved by a construction which is as economical as constructions of the prior art.

It thus will be seen that the objects of this invention have been fully and effectively accomplished. It will be realized, however, that the foregoing preferred specific embodiment has been shown and described for the purpose of illustrating the functional and structural principles of this invention and is subject to change without departure from such principles. Therefore, this invention includes all modifications encompassed within the spirit and scope of the following claims.

What is claimed is:

1. A hanger for suspending exhaust pipes and the like from a horizontally extending support comprising an

- elongated metallic member formed to provide a support engaging section and a pipe engaging section, said support engaging section being operable to be engaged in a generally downward direction over the support into an operative pipe suspending position with respect thereto, said support engaging section including a terminal end portion for engaging one side portion of the support when said support engaging section is disposed in said operative position, said terminal end portion including end surface means which faces generally upwardly when said support engaging section is disposed in said operative position, said support engaging section including integral portions disposed between said terminal end portion and said pipe engaging section which extend upwardly with respect to the aforesaid one side portion of the support transversely over an upwardly facing portion of the support and downwardly along an opposite side portion of the support when said support engaging section is disposed in said operative position, said integral portions having support engaging surface means operable in response to the suspension of a pipe or the like by engagement with said pipe engaging section for causing the downward force of the pipe load to be transmitted by said integral portions to said terminal end portion in such a way as to tend to move said end surface means in a direction upwardly and toward the one side portion of the support an extent which increases as the pipe load increases so that the resultant engagement of said end surface means with the one side portion of the support serves to prevent disengagement of said support engaging section from the support.
2. A hanger as defined in claim 1 wherein said elongated member is formed of spring steel wire.
3. A hanger as defined in claim 1 wherein said terminal end portion is straight.
4. A hanger as defined in claim 3 wherein said integral portions include an arcuately bent portion of approximately 180° extending downwardly from the terminal end portion and then outwardly and upwardly.
5. A hanger as defined in claim 4 wherein said integral portions include a straight portion extending upwardly from said arcuately bent portion in parallel relation with said terminal end portion.
6. A hanger as defined in claim 5 wherein said integral portions include a generally horizontally extending substantially straight portion disposed at an angle of approximately 90° with respect to said upwardly extending straight portion and a bent portion integrally joining said upwardly extending portion with said horizontally extending portion.
7. A hanger as defined in claim 6 wherein said integral portions include a generally downwardly extending substantially straight portion disposed at an angle of approximately 80° with respect to said horizontally extending portion and a bent portion integrally interconnecting said horizontally extending portion with said downwardly extending portion.
8. A hanger as defined in claim 1 wherein said pipe engaging section includes an upwardly opening generally V-shaped portion for engagement axially inwardly of an open end of a pipe, said V-shaped portion having end surface means for gripping the interior peripheral surface of the pipe (1) to prevent axial movement of said pipe in a downward direction when disposed in suspended relation by said V-shaped portion with said support engaging section in said operative position and

(2) to permit separation of the pipe therefrom by a combined rotational and axially outward movement with respect thereto, and a transversely extending stop portion between said V-shaped portion and said support engaging section in a position above the end surface means of said V-shaped portion for engaging the open end of the pipe and limiting the axially inward movement of the same with respect to said V-shaped portion.

9. A hanger as defined in claim 8 wherein said V-shaped portion includes two legs of unequal longitudinal extent, the longer of said legs being integrally interconnected with said stop portion, the shorter of said legs having an outwardly bent tip at the free end thereof, said tip having a transversely extending end surface intersecting the periphery thereof, the outer intersection of said tip end surface with the tip periphery defining the end surface means of said V-shaped portions.

10. A hanger as defined in claim 9 wherein said legs are substantially straight and define an angle of approximately 40° therebetween.

11. A hanger as defined in claim 10 wherein said tip is substantially straight and extends from the remainder of said shorter leg at an angle of approximately 10°.

12. A hanger as defined in claim 11 wherein said tip end surface is substantially planar and intersects the outer tip periphery at an angle of approximately 60°.

13. A hanger for suspending exhaust pipes and the like from a horizontally extending support comprising a length of spring steel wire bent to provide a support engaging section and a pipe engaging section, said support engaging section being operable to be engaged in a generally downward direction over the support into an operative pipe suspending position with respect thereto, said support engaging section including a substantially straight upwardly extending terminal end portion for engaging one side portion of the support when said support engaging section is disposed in said operative position, said terminal end portion including end surface means which faces generally upwardly when said support engaging section is disposed in said operative position, said support engaging section also including an arcuately bent portion of approximately 180° extending downwardly from the terminal end portion and then outwardly and upwardly, a straight portion extending upwardly from said arcuately bent portion in parallel relation with said terminal end portion, a generally horizontally extending substantially straight portion disposed at an angle of approximately 90° with respect to said upwardly extending straight portion, a first bent portion integrally joining said upwardly extending

portion with said horizontally extending portion, a generally downwardly extending substantially straight portion disposed at an angle of approximately 80° with respect to said horizontally extending portion, and a bent portion integrally interconnecting said horizontally extending portion with said downwardly extending portion, said pipe engaging section including an upwardly opening generally V-shaped portion for engagement axially inwardly of an open end of a pipe, and a transversely extending stop portion between said V-shaped portion and said support engaging section for engaging the open end of the pipe and limiting the axially inward movement of the same with respect to said V-shaped portion, said V-shaped portion including two legs of unequal longitudinal extent, said legs being substantially straight and defining an angle of approximately 40° therebetween, the longer of said legs being integrally interconnected with said stop portion, the shorter of said legs having an outwardly bent tip at the free end thereof, said tip being substantially straight and extending from the remainder of said shorter leg at an angle of approximately 10°, said tip having a transversely extending end surface intersecting the periphery thereof, said tip end surface being substantially planar and intersecting the outer tip periphery at an angle of approximately 60°.

14. A hanger for suspending an exhaust pipe or the like from a horizontally extending support comprising a length of steel wire bent to provide an upper support engaging section and a lower pipe engaging section, said support engaging section being of generally inverted U-shaped configuration for engagement over the support and having vertically extending portions of unequal longitudinal extent, said pipe engaging section including a lower generally V-shaped portion for engagement within an open end of the pipe having legs of unequal longitudinal extent, said legs being substantially straight and defining an angle of approximately 40° therebetween, the shorter of said legs having an outwardly bent tip on the free end thereof, said tip being substantially straight and being bent outwardly an angle of approximately 10° with respect to the longitudinal extent of the associated shorter leg, said tip including an end surface disposed in a flat plane which intersects with the outer periphery of the tip at an included angle of approximately 60°, and a stop portion for engaging the open end of the pipe extending transversely between the upper end of the longer leg of said V-shaped portion and the lower end of the longer vertically extending portion of said support engaging section.

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April 24, 1956

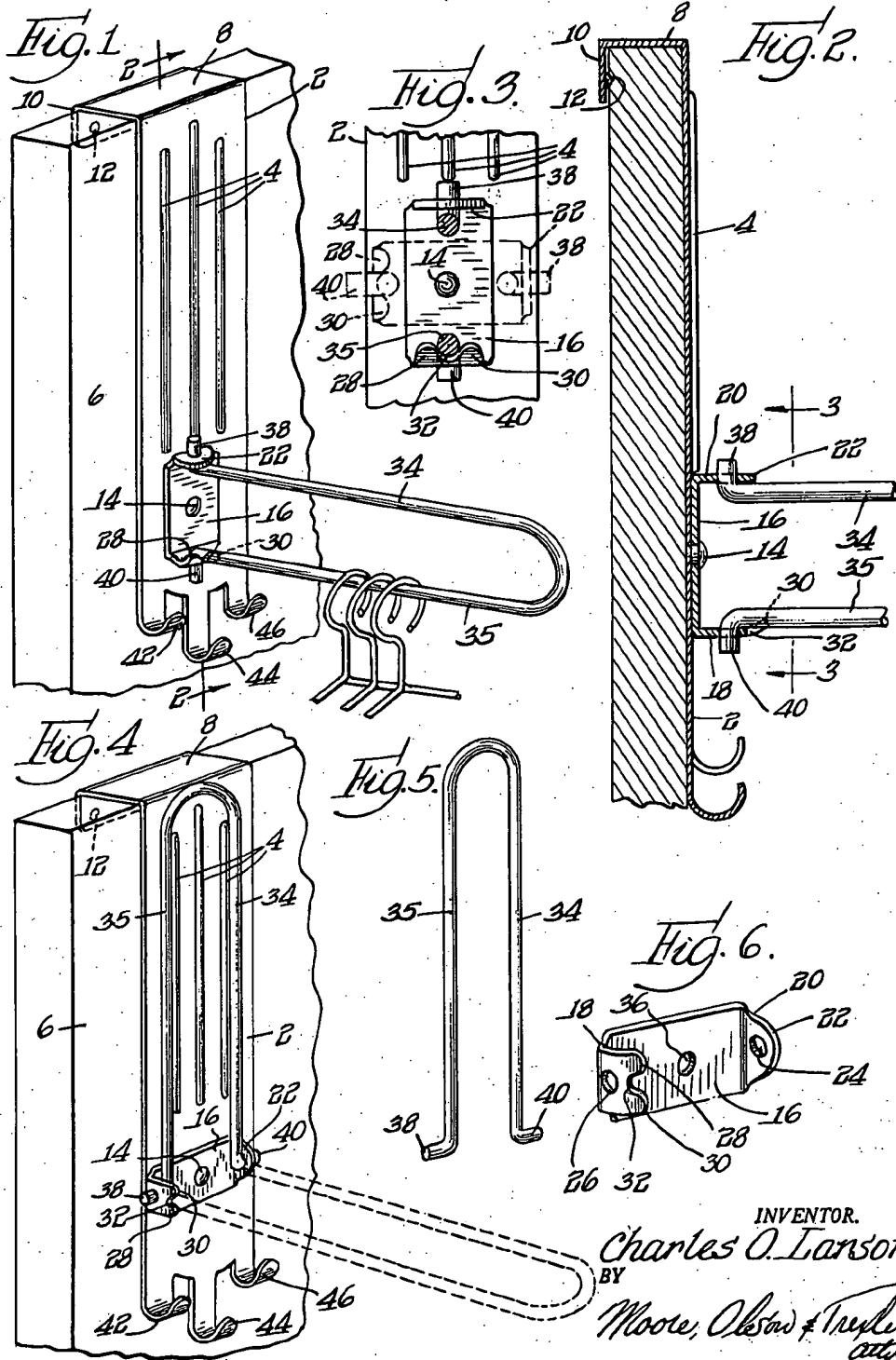
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WARDROBE HANGER

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3 Sheets-Sheet 1



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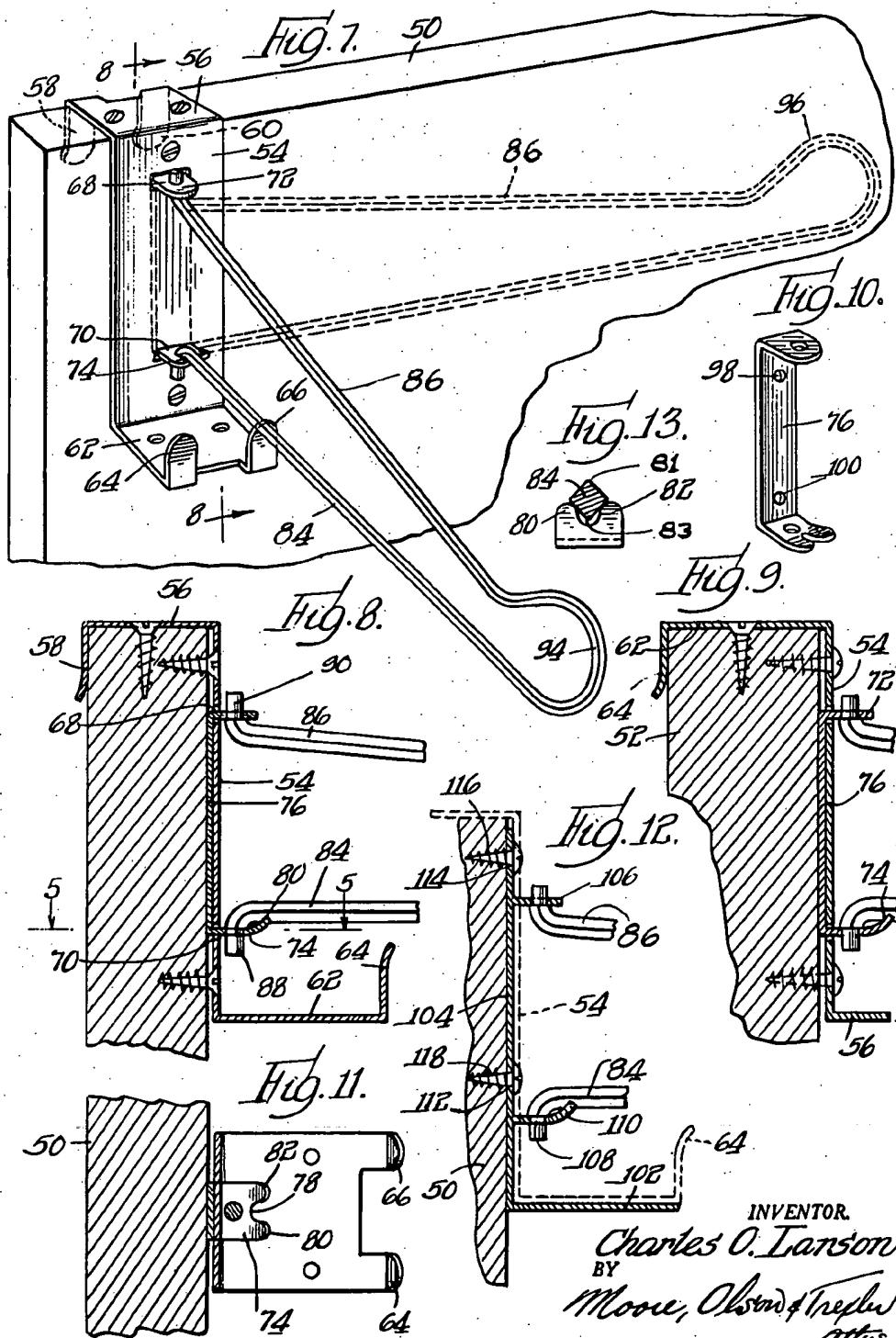
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WARDROBE HANGER

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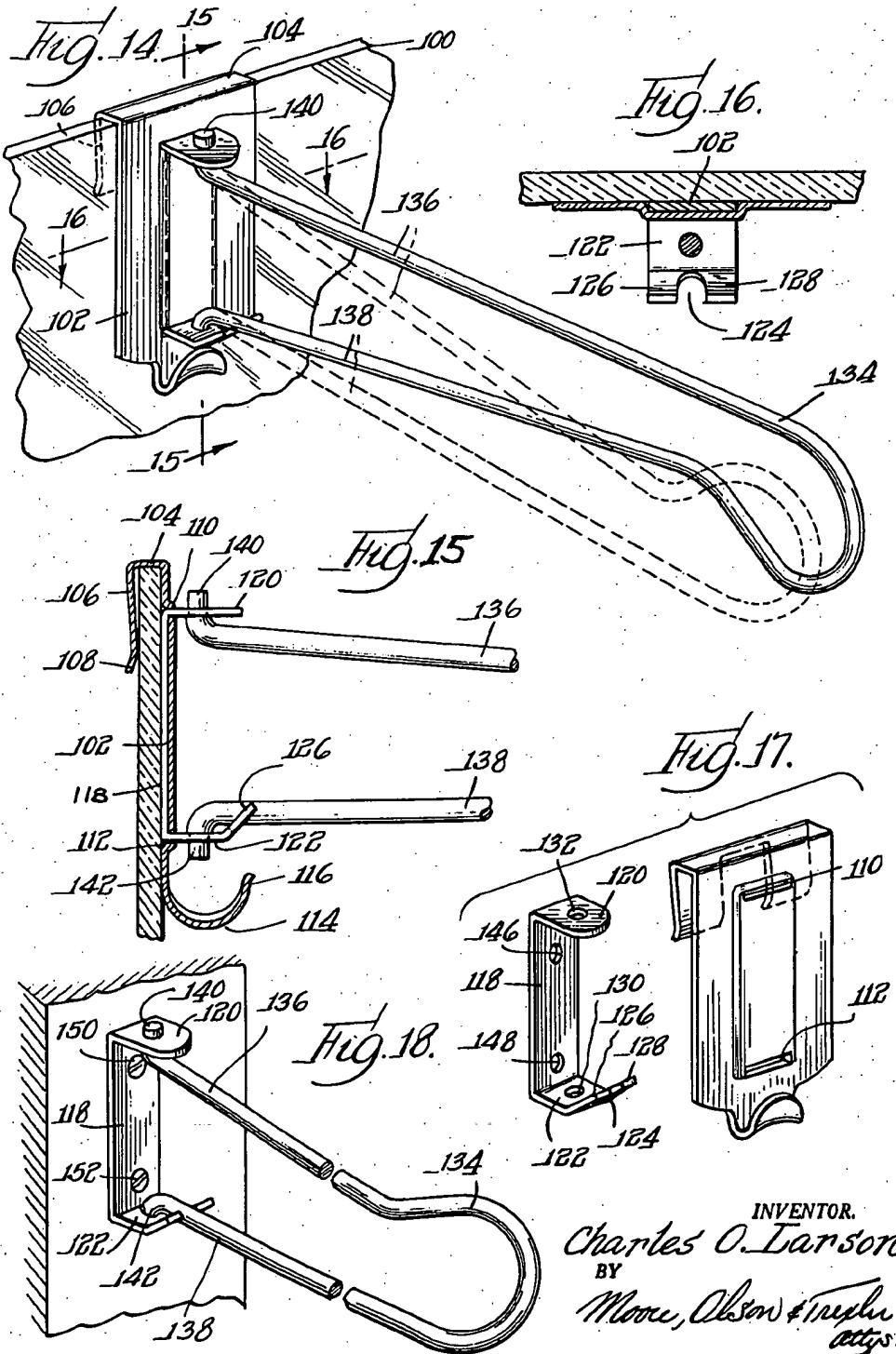
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WARDROBE HANGER

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WARDROBE HANGER

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Application December 29, 1952, Serial No. 328,316

3 Claims. (Cl. 211—96)

This invention relates to a wardrobe hanger, and among the objects of the invention is to provide a simple hanger of the wardrobe type constructed and arranged to be hung over a door, which will fold up compactly for storage purposes or for sales purposes or for packing and shipping.

Another object of the invention is to provide a hanger for garments or other objects and particularly a wardrobe hanger which is operative to clamp over the top edge of doors of different thicknesses, or over a relatively thinner car window, and which, in such position, provides a member extending at right angles from the door or window from which various articles may be hung, and which member is adapted to be folded flat against the confronting side of the door.

Yet another object of the invention is to provide a simple type of reversible bracket operative in one position to overhang a door of predetermined thickness and yet which bracket, by reversing the parts, is operative to be hung over a door of less thickness, said hanger including a relatively long outstanding hook-like member, with means to maintain said hook-like member in outstanding position at right angles to the plane of the door, or which may be folded to a position parallel with the plane of the door.

Still another object of the invention resides in providing a somewhat Z-shaped sheet metal member having upper and lower clips of channel shaped formation and of varying thicknesses, together with a detachable plate-like member having ears adapted to pass through openings in the body of said Z-shaped clip, a resilient wire-like bracket having opposed resilient legs adapted to engage in the spaced ears of the clip, there being means for maintaining the bracket in outstanding position at right angles to the body of the clip, or for permitting the bracket to fold into a position parallel with the normal face of the clip to provide a relatively Z-shaped clip member having means for attachment to the front face of a door and having outstanding parallel ears spaced apart to receive the terminal members of a resilient bracket-like hanger having spring-like legs which through their resiliency maintain the bracket either in outstanding relation to the body of the bracket or whereby the bracket may be folded into parallel relation to its supporting member to provide a bracket member which may be hung over the top edge of a door or other flat member, the bracket being constructed and arranged to snugly fit a door or wall member of different thicknesses, and the bracket being constructed and arranged to provide a pivotally mounted support, together with means for maintaining the support in outstanding normal position to the face of the bracket or alternatively to be swung or folded inwardly into a position parallel with the face of the wall or support member to which the bracket is attachable.

Yet another object of the invention resides in providing a wardrobe hanger having a pivoted wire-rod hanging element which may be turned at an angle of 90 degrees and in one angular position is so constructed as to fold

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up snugly against its vertical support so as to be out of the way when not in use or so as to be compactly arranged for counter display or for shipping purposes, and which at the same time may be swung downwardly into a horizontal position and turned 90 degrees about its axis so as to provide a more sturdy support for one or more coat hangers which may support a series of suits or coats thereon.

These and other objects of the invention will be apparent from a perusal of the following specification when taken in connection with the accompanying drawings wherein:

Fig. 1 is a front perspective view of the wardrobe hanger when placed in position over the top edge of the door with the device depending downwardly snugly along one side of the door;

Fig. 2 is a section on lines 2—2 of Fig. 1;

Fig. 3 is a section on lines 3—3 of Fig. 2;

Fig. 4 is a perspective view like Fig. 1 showing the hanging element in turned and upwardly swung position to provide a compact arrangement for storage or for shipment, and whereby the pivoted hanging element is moved to folding position;

Fig. 5 is a view of the wire rod coat hanger or other article supporting elements;

Fig. 6 is a view of the bracket member into which the wire rod element fits;

Fig. 7 is a perspective view of the preferred form of hanger shown in extended position, and also shown in dotted lines folded back against a door or other support;

Fig. 8 is a sectional view taken on line 7—7 of Fig. 7 showing a narrow type of door used as support;

Fig. 9 is a sectional view showing the bracket reversed to use with a heavier or thicker type of door;

Fig. 10 is a perspective view of the garment hoop holder;

Fig. 11 is a sectional view taken on line 11—11 of Fig. 8;

Fig. 12 is a modified type showing the use of a single plate to be affixed to the surface of a door;

Fig. 13 is a view showing the manner in which the lower tab or clip of the bracket shown in Fig. 8 holds the wire bracket outwardly in extended garment supporting position;

Fig. 14 is a perspective view of a garment hanger used in connection with an automobile car window or the like;

Fig. 15 is a section taken on line 15—15 of Fig. 14;

Fig. 16 is a plan section taken on line 16—16 of Fig. 14;

Fig. 17 is a perspective view of the bracket member; and

Fig. 18 is a perspective view of a hanger shown in Fig. 10 used as a permanent fastening device.

Referring now to the drawings in detail, the improved wardrobe hanger comprises in general a metal base 2 of generally flat stock formed into an elongated generally rectangular strip of metal having stiffening corrugations or ribs 4 longitudinally of the face thereof. Means is provided for supporting this supporting base snugly against the wall, or face 6 of a door or other similar main supporting member, which comprises preferably a hook shaped top portion 8 formed by bending the upper portion of the metal support 2 to provide an open flanged tongue 10 spaced from the front wall 2 of the support a distance corresponding to the thickness of a door. As shown in Figs. 1, 2, and 4, this flange fits over the top edge of the door and holds the support 2 in exact snug position. Additionally, a projection 12 on the inner face of the flange member 10 of the door engages or presses into the wood of the door to prevent inadvertent removal.

The support is of sufficient length downwardly along the face 6 of the door so that the entire long support 2 contacting the rear wall 6 of the door provides a sturdy

support for the bottommost part of this metal panel 2. Toward the lower end of the panel 2 there is provided a pivotal pin 14 which pivotally unites a U-shaped bracket 16 to the panel 2. This U-shaped bracket has a pair of normally disposed outstanding flanges 18 and 20. The bracket 20 is provided with a pivotal hole 26 and is provided with a pair of lug or rounded tooth projections 28 and 30 between which is formed a depression or cavity 32 shaped generally to the configuration of the rod or wire 34 which forms the pivotal support for the coat hangers or other devices to be suspended. At the center of the plate 16 there is provided a pivotal hole 36 through which the rivet or pivotal pin 14 passes to provide the pivotal joint which enters the base plate 2. The pivotal wire rod 34 is provided with oppositely extending feet 38 and 40 which are spring pressed and engage within the holes 24 and 26 of the bracket plate 16. In one position, to-wit, that shown in Fig. 1, the parallel wire rod support 34 is shown as pivoted in a position that is normally at right angles to the plane of the plate 16 having its long axis lying parallel to the long axis of the plate 2. In this position one of the arms 34 of the wire rod support will lie in the groove 32 where it is held by the springiness of the wire rod 34. From an inspection of Fig. 3 it will be noted that the bracket 16 may be turned 90 degrees to the position shown in dotted lines in Fig. 3, in which case the plane of the wire rod portions or arms will likewise be turned 90 degrees to the position shown in dotted lines in Fig. 5, from which position it can be swung upwardly to lie flat against the metal support 6 as shown in Fig. 4. By pressing upwardly upon the part 35 of the wire rod 34 it can be removed from the position shown in Fig. 2, wherein it lies in the groove 32, to a position where it will swing upwardly as in Fig. 4 and lie flat against the support plate 6.

The bottom of the plate 2 is provided with a plurality of upwardly bent hooks 42, 44 and 46 from which may be suspended a number of articles. These hooks lie in different vertical planes as shown, and the lowermost hook lies in a different horizontal plane from the uppermost hooks.

Referring now to the drawings of the preferred embodiment of the invention, the bracket shown in Fig. 7 is attached to a support such as the top edge of a door 50 which, as is shown in Fig. 8, is relatively thinner than the door 52 shown in Fig. 9. The bracket member is preferably formed of sheet metal and comprises a relatively flat straight rectangular shape of metallic material 54 which at its upper ends is bent at right angle as at 56 see Fig. 8 to provide a rearwardly extending flange which terminates in two downwardly extending spring legs or clamps 58 and 60, the clamps 58 and 60 being behind the plate 54 and only in dotted lines being shown in Fig. 7. In addition, the plate 54 is provided with an integrally and forwardly extending second flange 62 which extends at right angles to plate 54 and in a direction opposite that which the flange 56 extends from the plate 54. The free end of flange 62 is provided with a pair of upstanding spring legs or clamp members 64 and 66 which are of spring formation as are the legs 58 and 60. Clamp members 64 and 66 are constructed to grip the rear face of the top edge of the door 52, as shown in Fig. 9, whereby the associated end of plate 54 is positioned uppermost and suspended from the top edge of the door 52. In addition, the plate 54 is provided with spaced slots such as 68 and 70 through which project apertured ears 72 and 74 extending normally and laterally from a second sheet metal plate 76. This plate 76 is arranged to lie flat against the rear face of bracket plate 54 with the ears 72 and 74 projecting outwardly through the slots 68 and 70 in the position shown in Figs. 7 and 8, whereby to provide a pair of spaced bearings. The lower ear 74 is provided with a central cutout 78 and with spaced apart upwardly extending spring locking lugs or teeth 80 and 82, the purpose of which will soon appear.

The pivotally hung support bracket is formed of rela-

tively heavy steel or other metal gauge wire. The wire of this metal bracket is shown in cross section in Fig. 13, and has any desirable cross sectional shape, but is preferably substantially square as shown in cross section in Fig. 13 to provide upper and lower corners 81 and 83 for the purpose of spring locking in the areas between the upstanding lugs 80 and 82 and the ears 72 and 74 of the pivotal bracket plate.

The support bracket is shown as comprising a relatively long section of metal bent upon itself to provide upper and lower legs 84 and 86 with a closed loop portion 94, the upper loop portion of which extends above the upper leg 86 of the bracket as at 96. This is shown best in dotted lines in Fig. 7. The inwardly directed ends of legs 84 and 86 are provided with outwardly directed bearing members 88 and 90, respectively. Bearing members 88 and 90 are aligned to extend in opposite directions from each other. Bearing members 88 and 90 extend into the bearings formed in ears 72 and 74 on the second bracket plate 76, the support bracket legs 84-86 being under compression whereby to hold bearing members 88-90 in the engaged position. When the support bracket legs 84 and 86 are moved at right angles to the plate 54, the two upstanding locking lugs or ears 80 and 82 (see Fig. 13) maintain the support bracket in this position. Alternatively, the support bracket leg 84 and 86 may by means of their resiliency, move or swing to a position folded against the flat face of the door 50, as shown in the dotted lines in Fig. 7.

Figures 8 and 9 show the manner in which the bracket may be reversed top for bottom upon itself to attach to a thinner or thicker door; for instance, to apply the bracket to the thicker door 52 of Fig. 9 the bracket is removed from the top of the door and the plate 76 shown in Fig. 10 is then detached from the plate 54 of the bracket; the plate 54 is then inverted and reversed from the position shown in Fig. 8 to the position shown in Fig. 9. It will be noted that in Fig. 8 the relatively wider flange 62 has now become that flange which fits over the wider or thicker door 52 and the plate 54 depends downwardly and terminates in the upstanding legs 58-60 (not shown in Fig. 9). These same legs 58-60 are shown in the uppermost or top portion of the plate 54 as shown in Fig. 8 as overlying the top edge of the door when applied to a thinner door, whereas when the bracket is applied to a thicker door, as shown in Fig. 9 the flange 56 will be at the bottom and the spaced legs 58-60 will extend upwardly of the bottom of the bracket plate. Before the inverted and reversed bracket member is applied to the door, the plate 76 is applied to the back of the bracket plate 54 in the manner shown in Fig. 9 with the ears 72 and 74 extending forwardly just as in the case of the construction shown in Fig. 8 and in the same manner as in Fig. 8 the wire bracket is then attached to the ears to extend forwardly in exactly the same way so that the bracket is mounted to extend forwardly from the plate 54 as shown in Fig. 7, or to be swung to folded position at right angles to such position is shown by dotted lines in Fig. 7.

If desired, the top and bottom flanges 56 and 62 may be provided with screw or nail holes whereby the short or long flange may be screwed or nailed to the top edge of the door 50, as shown in Figs. 7, 8, and 9.

It will be understood that the plate 76 see Fig. 10 is likewise provided with screw or nail holes 98 and 100 whereby this small bracket 76 may likewise be screwed or nailed to the face of a door for the reception of the bearing ends 88 and 90 of the spring support brackets so that this small plate 76 with the legs 84-86 mounted in position between the ears 72 and 74 may be utilized by itself as a support from which the bracket may hang and from which it may be folded flat against the door or may be held in outstanding position by means of the spaced lugs 80 and 82.

In Fig. 12 I have shown a modified structure which 75 comprises an L-shaped metal piece having a bottom

flange 102 and an angularly disposed longer plate-like member 104, which plate-like member is provided with an integrally outstanding ear centrally of the plate-like member, the ear being shown at 106, and which plate-like member also has an integrally outstanding bottom ear exactly of the shape of the ear 74 of Fig. 7 extending outwardly of the bracket-like member shown in Figs. 8 and 9. The bottom of this ear shown in Fig. 12 is formed flat as at 108 and is provided with spaced upstanding spring-like lugs 110, being of the same shape as the lug 74 and the spaced ears 110 correspond in shape to the ears 80 and 82 of Fig. 11. In Fig. 12 the plate 104 has no upper integral rearwardly normally extending flange, but the plate 54 does have a rearwardly extending flange as shown in dotted lines as corresponding to the flange 56 of plate 54 in Fig. 7.

In Fig. 12 the L-shaped plate is provided with a pair of holes 112 and 114 through which screws or other fastening means are passed for securing the L-shaped plate to the front of the door 50 or 52, or alternatively, this L-shaped plate will fit within or fit on the rear side of the plate 54, see Fig. 7, just as the plate 76 of Fig. 10 fits on the rear plate 54 of Fig. 7. In this alternative construction the ears 106 and 110 of plate 104 will then pass through the openings 68 and 70 of the plate 54 of Fig. 7 to provide upper and lower resilient bearings for receiving the ends 108 of the upper and lower legs 90 and 92 of the garment holding bracket see Fig. 12. When this latter type of structure is used in cooperation with the plate 54 of Fig. 7 the structure is then reversible for narrow or wider doors, which is not the case when the bracket member 104 is used alone with the spring-like legs 90 and 92 of the pivotally mounted garment holder.

In Figures 14, 15, and 16 I have illustrated a garment hanger constructed and arranged to be placed over the top edge of a glass car window or partition such, for instance, as when a car window or partition slightly lowered. This construction follows in a general way the prior construction herein illustrated, except that the same is adaptable to the upper edge of a relatively narrow glass car window 100. In this adaptation, bracket member 102 is preferably made a bit wider than bracket member 54 of Fig. 7 and is provided at its top portion with a rearwardly bent flange 104, which flange is then bent downwardly as at 106 at a spaced distance from flange 102 in accordance with the desired width of the car window 100. Preferably the lower edge 108 of the flange 106 is bent outwardly to prevent scratching the surface of the car window under vibration. At substantially the point 110 the plate 102 of the bracket member is provided with a substantially horizontal slot. So also, at the point 112 this plate 102 is provided with an additional horizontal slot spaced the required distance from slot 110 to receive the secondary bracket member shown at the left of Fig. 17 and which will be referred to hereinafter. The lower portion of the plate 102 is provided with a centralized trough 114 which is preferably of arcuate formation and is bent upwardly as at 116 as shown in Figs. 14 and 15. If desirable, this upstanding arcuate tongue shown at 114 may be substantially wide, for instance, as wide or wider than the tongue 102, in order to form a hook or a cigarette tray to hold a lighted or unlighted cigarette. The bracket plate 102 with its two vertically spaced slots is adapted to receive a smaller bracket member comprising a plate-like strip 118 having at one end an inwardly bent flange or ear 120 bent at right angles to the plane of plate 118, and at the opposite end a second normally extending flange 122 the outer end of which is bifurcated as at 124 (see Fig. 16), to provide two upwardly bent prongs 126 and 128.

In addition, the flange portion of plate 118 is provided with an opening 130 and the top flange 120 is provided with a corresponding and registering hole or opening 132. The bracket 118 is assembled at the rear of the plate

102 in the manner shown in Fig. 15 with the upper ear 120 and the lower ear 122 extending through the upper slot 110 and the lower slot 112 in the manner shown in Fig. 15 and 16. By this means, the smaller bracket provides forwardly extending vertically spaced apart ears for the bracket plate 102. An elongated pivotally mounted wire-like hanger 134 is provided see Fig. 14. This bracket is preferably formed of strong wire and is provided with elongated shanks 136 and 138 which shanks are formed with angularly disposed round ends 140 and 142, which ends are adapted to project with spring-like vigor into the openings 130 and 132 of the ears 120 and 122 of the bracket piece 118 see Fig. 7. In this position the bracket 134 may be folded substantially flat-wise to the glass car window, or may be projected into the position shown in Fig. 14 wherein it lies at right angles to the glass car window 100. Means is provided, such as the slot 124 and the upstanding spaced ears 126 and 128 for retaining the bracket 134 in forwardly extending position. This is accomplished by the springiness of the wire, the springiness of the ears 126 and 128 and the intervening slot 124, as is evident from an inspection of the device.

In Fig. 17 I have shown the small bracket 118 as provided with a pair of holes 146 and 148 by which the same may be affixed by screws 150 and 152 to a suitable slot or other support and in a manner such that this small bracket 118 may be of itself fastened in position so that the elongated wire bracket 134 may be pivotally connected thereto in the manner shown in Fig. 18 by having the ends 140 and 142 enter the holes or slots 130 and 132 of this bracket in the manner hereinbefore described.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A wardrobe hanger comprising a first bracket member including a first plate, said plate on opposed edges thereof having flanges extending in opposite directions from the plane thereof, each of said flanges having clamp members extending normally therefrom in the direction of said plate to provide two oppositely facing clamp means adapted to overlie and grip the top of a support, one of said flanges being of greater width than the other so that supports of varying thicknesses may be engaged and gripped by said clamp means at opposite ends of said plate; a second bracket member including a second plate having its opposed ends bent normally thereof in the same direction to provide a pair of spaced ears, said second plate being engageable with one of the faces of the said first plate with the ears thereof extending through the spaced openings in said first plate, said ears being apertured to provide a pair of spaced bearings extending forwardly of said first plate, and a spring metal wire support bracket folded upon itself to provide a pair of legs, the ends of said legs having normally extending bearing members engaging in the bearings of said ears, said second bracket member and said support bracket being reversible with respect to said first bracket member so that the orientation of said support bracket is the same when either of said clamp means is engaging and gripping a support.

2. A wardrobe hanger comprising a first bracket member including a first plate, said plate on opposed edges thereof having flanges extending in opposite directions from the plane thereof, each of said flanges having clamp members extending normally therefrom in the direction of said plate to provide two oppositely facing clamp means adapted to overlie and grip the top of a support, one of said flanges being of greater width than the other so that supports of varying thicknesses may be engaged and gripped by said clamp means at opposite ends of said plate, said plate centrally thereof being provided with spaced openings, a second bracket member including a second plate having its opposed ends bent normally thereof in the same direction to provide a pair of spaced ears,

said second plate being engageable with one of the faces of said first plate with the ears thereof extending through the spaced openings in said first plate, said ears being apertured to provide a pair of spaced bearings extending forwardly of said first plate, one of said ears having spaced apart locking lugs formed on the end thereof and extending toward the other ear, said second plate being positioned on said first plate so that said ear carrying said locking lugs is positioned lowermost when the hanger is in operative position, and a spring metal wire support bracket folded upon itself to provide a pair of legs, the ends of said legs having bearing members formed thereon and extending outwardly normally therefrom to engage in said bearings, the resiliency of said support bracket holding said bearing members in said bearings, one of said support bracket legs being adapted to be positioned between said locking lugs to hold said support bracket perpendicular to said plates, said second bracket member and said support bracket being readily disassembled from said first bracket member to permit

reversal of said first bracket member with respect thereto to engage a different support.

3. A wardrobe hanger as set forth in claim 2, wherein the wire support bracket has a substantially square cross sectional configuration.

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Conley, Jr.

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[54] **METHOD AND SYSTEM FOR STORING AND HANGING ARTICLES**

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[73] Assignee: **Graph-It, Inc., Miamisburg, Ohio**

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248/490**

[58] Field of Search **211/87, 89, 99,
211/104, 106, 118, 119; 248/214, 215, 324,
489, 490, 494, 495, 496**

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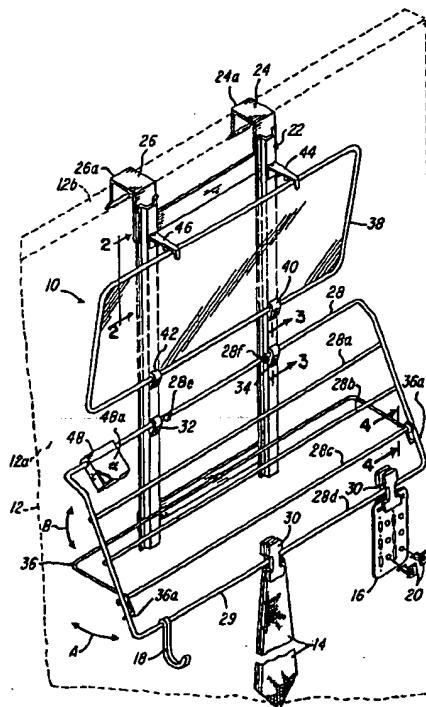
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[57] **ABSTRACT**

This invention relates to a method and apparatus for storing and hanging various articles. The storage and hanging system comprises an article receiver which is adjustable secured to a support and which is adjustable to a plurality of different positions such that articles may be hung on one or more rails of the receiver. Subsequently, the article receiver may be collapsed to a closed position so that the stored articles consume a relatively small amount of space. The system is convenient in that it provides a combination of storage containers, and jewelry clips and other clips, along with a mirror which is particularly useful when the system is being used, for example, at a school, office or even during traveling. The system is conveniently designed to be hung on a door or other suitable surface, but it is contemplated that the support for the article receiver may be mounted directly to a surface.

42 Claims, 3 Drawing Sheets



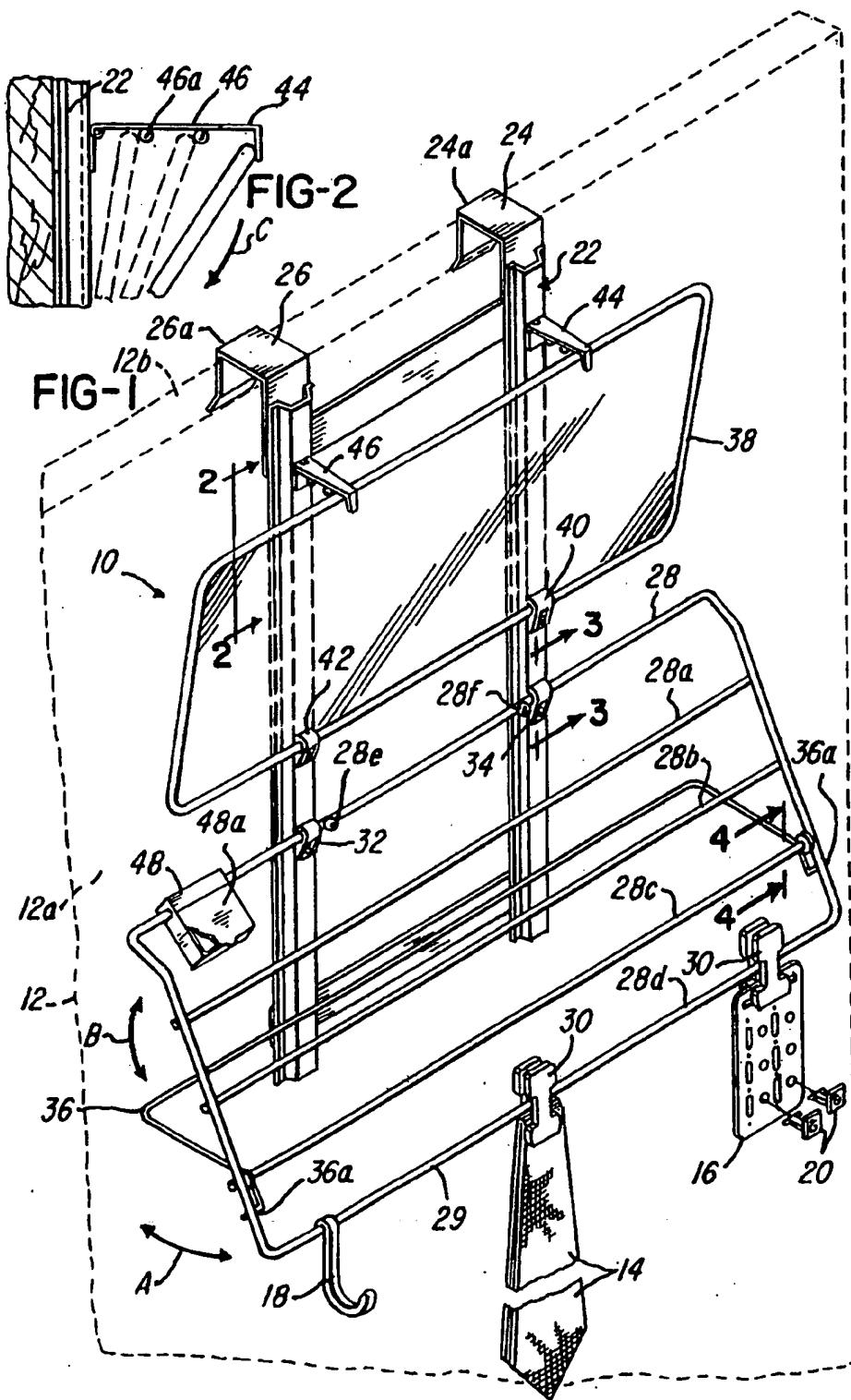


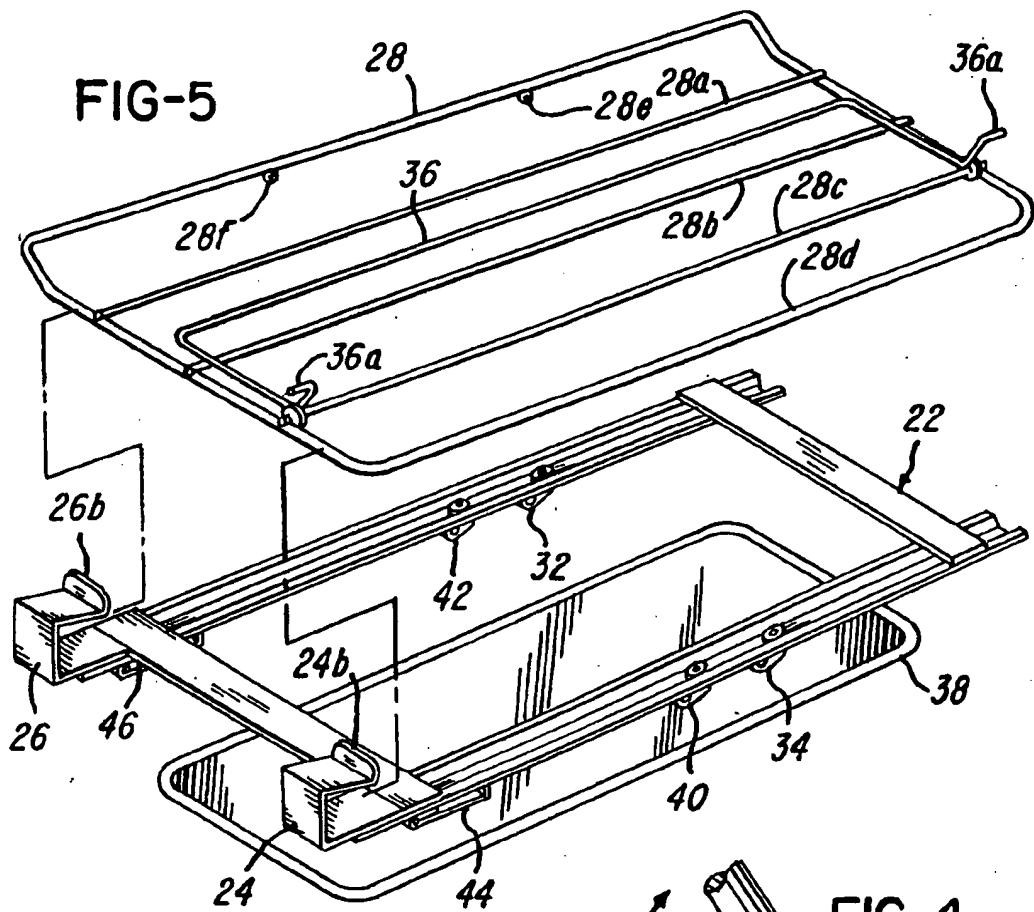
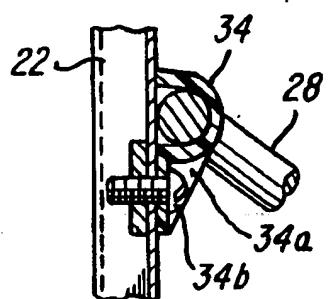
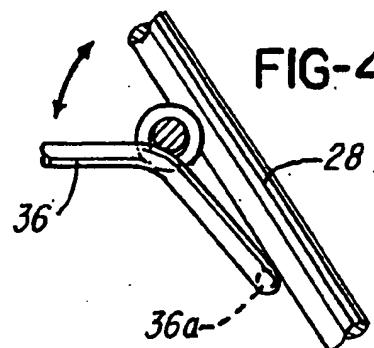
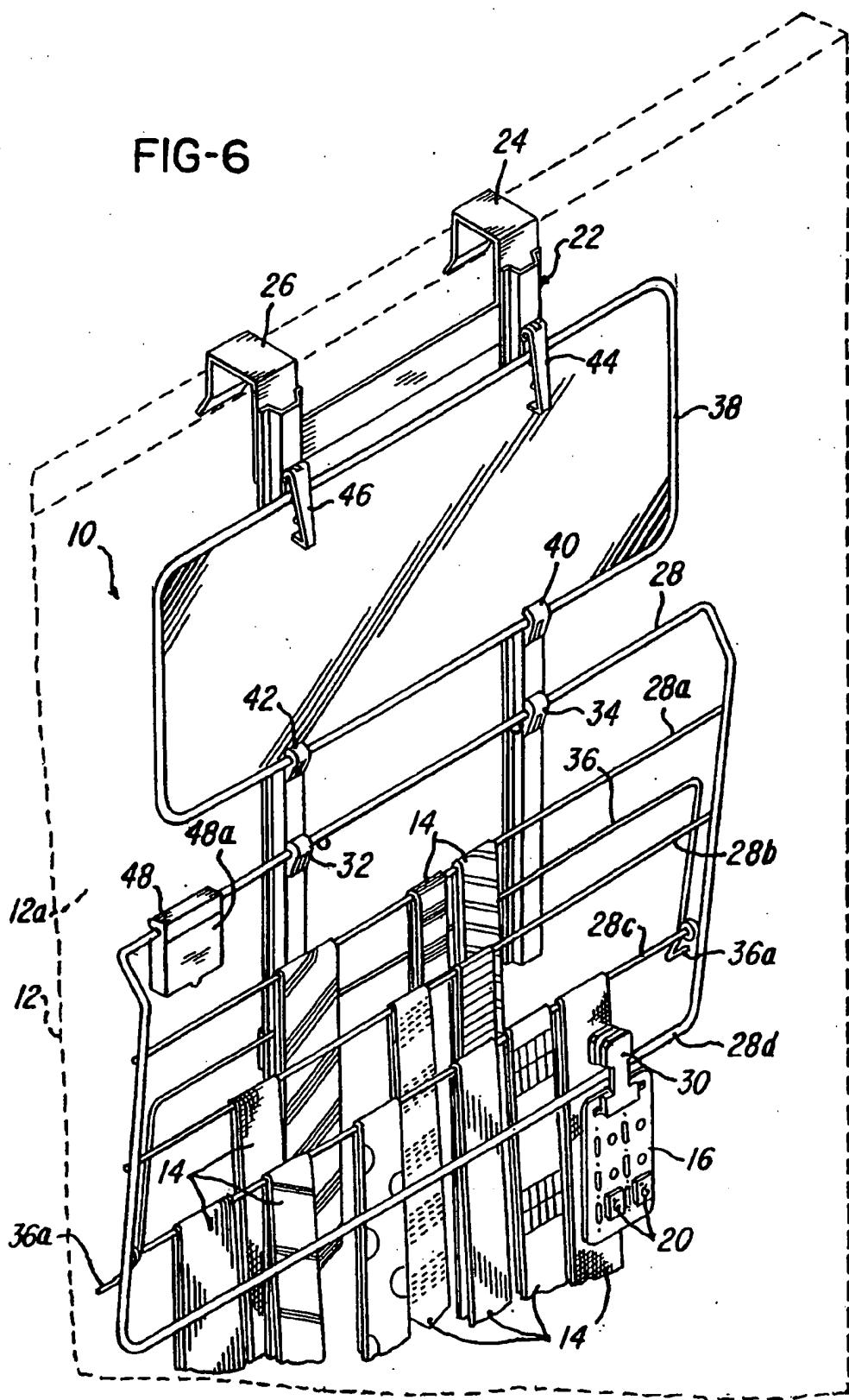
FIG-5**FIG-3****FIG-4**

FIG-6



METHOD AND SYSTEM FOR STORING AND HANGING ARTICLES

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a system and method for storing and hanging various articles, such as ties, jewelry and the like, in spaces which are confining.

2. Description of Related Art

In many temporary and permanent living quarters, such as homes, motels, apartments, condominiums, and the like, there is limited space for conveniently storing articles such as ties, belts, scarves, etc. While there have been many approaches to hanging articles from, for example, a rail, door knob or the like, the prior art designs were deficient because they did not provide a system and method for easily loading such articles in a tiered arrangement which can collapse to permit storing the articles in a relatively small amount of space.

Such prior art systems also fail to provide means for storing jewelry items (such as rings, necklaces, coins and the like) in combination with both a system for hanging and storing clothing articles and a reflective surface for tying ties.

What is needed, therefore, is a convenient and portable system and method for storing and hanging articles in a manner not heretofore known.

SUMMARY OF THE INVENTION

A primary object of this invention is to provide a system and method for storing and hanging articles on an article receiver which can be adjustably moved towards and away from a support surface onto which the receiver is adjustably mounted.

In one aspect of the invention a hanging system comprises a support for hanging on a surface and an article receiver adjustably secured to the support for supporting an article above the ground, the article receiver being adjustably secured to said support such that it can move towards and away from said surface.

In another aspect of the invention this invention comprises a method for supporting a plurality of articles on a door comprising the steps of hanging a support on a top of a door, adjustably securing an article receiver to the support, moving said article receiver from a closed position to an open position and situating an article on said article receiver.

In still another aspect of the invention this invention comprises a hanging system comprising base means for securing the support onto a planar surface, article receiving means adjustably secured to the base means for supporting at least one article above the ground, and latch means for latching the article receiving means in either an open or a closed position.

An object of this invention is to provide a combination mirror and hanging system which is portable and which a user can use while he or she is dressing.

Another object of this invention is to provide a storage and hanging system which utilizes a relative small amount of space.

Still another object of this invention is to provide a combination mirror and article receiver which are both collapsible.

These and other objects and advantages of the invention will be apparent from the following description, the accompanying drawings and the appended claims.

BRIEF DESCRIPTION OF ACCOMPANYING DRAWINGS

FIG. 1 illustrates a storage and hanging system in accordance with one embodiment of the invention as the storage and hanging system is situated on, for example, a door;

FIG. 2 is a view taken along the line 2—2 in FIG. 1 showing adjustable positions for a mirror used in the storage and hanging system;

FIG. 3 is a view taken along the line 3—3 in FIG. 1 showing details of the fastening means used for fastening an article receiver to a support in the storage and hanging system;

FIG. 4 is a view taken along the line 4—4 in FIG. 1 showing an arm of the article receiver in a down position;

FIG. 5 is a view illustrating the portability and collapsibility of the storage and hanging system; and

FIG. 6 is a view showing various articles stored and hung while the article receiver and mirror are in a closed position.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to FIG. 1, a storage and hanging system 10 is shown supported on a planar surface, such as a door 12. The system 10 is suitable for supporting a plurality of articles such as a tie 14, a jewelry support 16 or clothing hook or clip 18 which is suitable for supporting, for example, a hat (not shown) above the ground. The jewelry clip 16 is suitable for supporting jewelry, such as cuff links 20, earrings (not shown) and the like.

The hanging system comprises a support means, base or support 22 for hanging on the planar surface 12. The support 22 comprises a plurality of legs 24 and 26. Notice that the legs 24 and 26 each comprise a U-shaped end 24a and 26a, respectively. In the embodiment being described, the ends 24a and 26a are generally U-shaped and comprise a flange 24b and 26b (FIG. 5), respectively, which facilitates sliding the support 22 onto the planar surface 12.

In the embodiment being described, the hanging system 10 comprises an article receiver 28 (FIG. 1) comprising a plurality of rails, such as rails 28a, 28b, 28c and 28d which are suitable for receiving articles, such as the tie 14 and clip 18. The hanging system 10 may also comprise a plurality of clips 30 which are suitable for holding the tie 14 or even a belt (not shown) in a clothes-pin fashion, as illustrated in FIG. 1.

The hanging system 10 further comprises a pair of fasteners 32 and 34 for securing the article receiver 28 onto support 22 in a manner which will permit the article receiver 28 to pivot in the direction of double arrow A in FIG. 1. Notice that the article receiver 28 comprises a pair of stops 28e and 28f which cooperate with the fasteners 32 and 34 to reduce or eliminate lateral movement of the article receiver 28 relative to the support 22. As best illustrated in FIG. 3, the fastener 34 comprises a plastic support 34a and a screw 34b for pivotally securing the article receiver 28 onto support 22.

The article receiver 28 also comprises a pivoting arm 36 which pivots in the direction of arrow B (FIG. 1) from a closed position (FIG. 6) to the open position shown in FIG. 1. The article receiver 28 cooperates with the support 22 to support the article receiver 28 in the position shown in FIG. 1. Notice that when the support arm 36 is in the down position shown in FIG. 1, the article receiver 28 is supported in the open position such that an end 29 of the article receiver 28 is supported approximately twelve inches away from surface 12. Although not shown, when the arm 36 is in

a folded-up position (FIG. 6), the end 29 swings downward toward surface 12 to a folded position (as shown in FIG. 6). This facilitates permitting the article receiver 28 to be situated in the closed position and is supported such that a distance between end 29 and a surface 12a of surface 12 is less than three inches.

FIG. 4 illustrates the pivoting motion of the arm 36 relative to the article receiver 28. Notice in FIG. 1 that the arm 36 comprises a stop or latch 36a for stopping the arm 36 such that the arm 36 lies in a plane which is substantially perpendicular to a plane defined by the support legs 24 and 26. This facilitates providing a rigid support for supporting the article receiver 28 in the open position.

Advantageously, this invention provides means for permitting a plurality of articles to be hung in a tiered arrangement. It should be appreciated that once one or more of the rails 28a-28d have received one or more articles, the arm 36 may be pivoted or raised to the closed position such that the articles are conveniently stored or hung as illustrated in FIG. 6.

In the embodiment being described, a mirror 38 or other reflective means or device is also pivotally secured via fasteners 40 and 42 to support 22 as illustrated in FIG. 1. Notice that latch means or a latch 44 and 46 are pivotally and hingeably secured to frame 22, as illustrated in FIG. 2. The latch pivots in the direction of arrow C in FIG. 2 to permit the mirror 38 to be secured in a closed position (FIG. 6) or, alternatively in the open position illustrated in FIG. 1. Notice that the latches 44 and 46 comprise a plurality of stops, such as stop 46a in FIG. 2, to permit the mirror 38 to be supported in various different positions.

Notice that the mirror 38 conveniently tilts in a variety of tilt angles illustrated in FIG. 2 and is provided such that a user may use the mirror 38 to, for example, tie a tie.

As illustrated in FIG. 1, a box 48 having a lid 48a may also be detachably fastened to a rail of article receiver 28 in order to provide a container for receiving jewelry, coins or other small items.

Thus, it should be appreciated that this apparatus provides a convenient storage system for storing and supporting clothing, jewelry, money and the like; however, this invention may be used in other applications, such as for traveling or in an office, school or workplace.

The supports 22 could be provided with more or fewer legs 24 and 26, or could be provided such that the legs 24 and/or 26 may be mounted directly to the surface 12 without the need for the U-shaped ends 24a and 26a, respectively. This may be achieved by using suitable fasteners such as a screw or by securing a gummied surface (not shown) which will permit the legs 24 and 26 to be mounted directly to a surface, such as a wall or a back of a door.

FIG. 5 illustrates that the hanging system may be disassembled such that the mirror 38, support 22 and article receiver 28 conveniently collapse into a compact and portable arrangement. Although not shown, a strap, rubber band, or suitable clip may be used to retain the components of the hanging system 10 in the collapsed and portable configuration.

A method for using the hanging system will now be described. Initially, the support 22 is situated on surface 12 by sliding ends 24a and 26a, for example, over a top end 12b of the door 12.

Thereafter, the end 29 is moved away from surface 12 such that arm 36 moves or falls into the position shown in FIG. 1, thereby causing the article retainer 28 to be situated in the open, article-receiving, position as shown.

After the various articles have been loaded onto one or more of the rails 28a-28d, the arm 36 may be moved upward (as viewed in FIG. 1) so that the article receiver 28 moves towards surface 12 and collapses to the closed position, as illustrated in FIG. 6.

In a similar manner, the mirror 38 may be moved towards and away from surface 12 by moving latches 44 and 46 upward (as viewed in FIG. 2) such that the mirror 38 is adjusted. In this regard, it should be appreciated that latches 44 and 46 are preferably formed from a plastic material such that they are resilient enough to permit such movement.

Advantageously, the storage and hanging system of the present invention provides a system and method for hanging various articles in a compact and convenient manner. This is particularly useful when there is limited spaced for such storage or hanging which is commonly the case in many closets, hotel rooms, and the like.

These and other objects and advantages of the invention will be apparent from the following description, the accompanying drawings and the appended claims.

20 I claim:

1. A hanging system comprising:
a support for hanging on a surface;
a mirror having a bottom edge pivotally secured to said support;
25 a mirror latch secured to said support at a location above said mirror and having a plurality of downwardly projecting stops, wherein each of said plurality of stops is positioned to hold a top edge of said mirror whereby said mirror is positionable at any one of a plurality of tilt angles relative to said support; and
30 an article receiver adjustably secured to said support for supporting an article above the ground;

said article receiver being adjustably secured to said support such that it can move towards and away from said surface.

2. The hanging system as recited in claim 1 wherein said article receiver is hingably secured to said support.

3. The hanging system as recited in claim 1 wherein said article receiver comprises a plurality of rails.

4. The hanging system as recited in claim 1 wherein said article receiver comprises a plurality of clips for coupling to said article.

5. The hanging system as recited in claim 1 further comprising at least one container secured to said article receiver for supporting a second plurality of articles above the ground.

6. The hanging system as recited in claim 1 wherein said article is either a belt or a tie.

7. The hanging system as recited in claim 4 wherein said plurality of clips comprises a plurality of clothes hangers.

8. The hanging system as recited in claim 1 wherein said support and said article receiver comprise an open position defining a depth of not more than 12 inches.

9. The hanging system as recited in claim 1 wherein said support and said article receiver comprise a closed position defining a depth of less than 3 inches.

10. The hanging system as recited in claim 4 wherein said system further comprises at least one clip card for receiving a third plurality of articles.

11. The hanging system as recited in claim 10 wherein said third plurality of articles comprises at least one tie pin or at least one cuff pin.

12. The hanging system as recited in claim 1 wherein said surface is a door.

13. The hanging system as recited in claim 1 wherein said support comprises a U-shaped end.

14. The hanging system as recited in claim 1 wherein said system further comprises an S-shaped clip for securing to said article receiver.

15. A method for supporting a plurality of articles on a door comprising the steps of:

hanging a support on a top of a door;

providing a mirror having a bottom edge pivotally secured to said support;

providing a mirror latch which is secured to said support at a location above said mirror, said mirror latch having a plurality of downwardly projecting stops;

holding a top edge of said mirror with a first stop of said plurality of stops so that said mirror assumes a first tilt angle relative to said support;

repositioning the mirror so that the top edge of said mirror is held with a second stop of said plurality of stops so that said mirror assumes a second tilt angle relative to said support;

adjustably securing an article receiver to said support; moving said article receiver from a closed position to an open position; and

situating an article on said article receiver.

16. The method as recited in claim 15 further comprising: pivoting said article receiver from said closed position to said open position.

17. The method as recited in claim 15 wherein said article receiver comprises a plurality of rails, said method further comprising the step of:

situating said article on one of said plurality of rails.

18. The method as recited in claim 15 further comprising the step of:

coupling a plurality of clips to said article receiver.

19. The method as recited in claim 15 wherein said article receiver comprises at least one container secured thereto for supporting a second plurality of articles above the ground; said method comprising the steps of:

opening said container;

situating said second plurality of articles in the container; closing said container.

20. The method as recited in claim 15 wherein said article is either a belt or a tie.

21. The method as recited in claim 18 wherein said plurality of clips comprise a plurality of clothes hangers.

22. The method as recited in claim 15 further comprising: pivoting said mirror from a closed position to an open position.

23. The method as recited in claim 15 further comprising the step of:

pivoting said article receiver to an open position defining a depth of not more than 12 inches.

24. The method as recited in claim 15 further comprising the step of:

pivoting said article receiver to a closed position defining a depth of less than 3 inches.

25. The method as recited in claim 15 further comprising the step of:

situating at least one clip card for receiving a third plurality of articles onto said article receiver.

26. The method as recited in claim 25 wherein said third plurality of articles comprises at least one tie pin or at least one cuff pin.

27. The method as recited in claim 23 wherein said method further comprises the step of:

latching said article receiver in said open position.

28. A hanging system comprising:

base means for securing a support onto a planar surface; a mirror having a bottom edge pivotally secured to said support; and

a mirror latch secured to said support at a location above said mirror and having a plurality of downwardly projecting stops, wherein each of said plurality of stops is positioned to hold a top edge of said mirror whereby said mirror is positionable at any one of a plurality of tilt angles relative to said support;

article receiving means adjustably secured to said base means for supporting at least one article above the ground; and

an article receiving latch for latching said article receiving means in either an open or a closed position.

29. The hanging system as recited in claim 28 wherein said system further comprises:

said article receiving means comprises a rack having a plurality of rails;

said rack being adjustably secured to said base means such that it swings from an open to a closed position.

30. The hanging system as recited in claim 28 wherein said article receiving means is hingably secured to said base means.

31. The hanging system as recited in claim 28 wherein said article receiving means comprises a plurality of rails.

32. The hanging system as recited in claim 28 wherein said article receiving means comprises clip means for coupling to said article receiving means.

33. The hanging system as recited in claim 28 further comprising at least one container means secured to said article receiving means for supporting a second plurality of articles above the ground.

34. The hanging system as recited in claim 28 wherein said article is either a belt or a tie.

35. The hanging system as recited in claim 32 wherein said clip means comprising a plurality of clothes hangers.

36. The hanging system as recited in claim 28 wherein said support and said article receiving means comprises an open position defining a depth of not more than twelve inches.

37. The hanging system as recited in claim 28 wherein said support and said article receiving means comprises a closed position defining a depth of less than three inches.

38. The hanging system as recited in claim 28 wherein said system further comprises clip card means for receiving a third plurality of articles.

39. The hanging system as recited in claim 38 wherein said third plurality of articles comprises at least one tie pin or at least one cuff pin.

40. The hanging system as recited in claim 28 wherein said surface is a door.

41. The hanging system as recited in claim 28 wherein said support comprises a U-shaped end.

42. The hanging system as recited in claim 28 wherein said system further comprises an S-shaped clip for securing to said article receiver.

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